



ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

FOR THE

COUNTY BOROUGH OF CARDIFF,

FOR THE YEAR 1901.

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MEDICAL OFFICER OF HEALTH.

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CARDIFF:

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1902.

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Inspector under Shop Hours Act and Inspector of Workshops :
J. ASHMAN.

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Cardiff Urban Sanitary Authority.

TOWN HALL,

CARDIFF,

June, 1902.

TO THE CHAIRMAN AND MEMBERS OF THE

CARDIFF URBAN SANITARY AUTHORITY.

GENTLEMEN,

I have the honour of submitting to you my Report for the year 1901, made in accordance with the Local Government Board's Order of March, 1891, which specifies the information to be contained in the Annual Reports of Medical Officers of Health.

A Memorandum, issued by the Board's Medical Officer, dated October, 1901, directs that—"the Report should be chiefly concerned with the conditions affecting health in the district and with the means for improving those conditions. It should contain an account, brought up to the end of the year under review, of the Sanitary circumstances of the district, and of any improvement or deterioration which may have occurred during the year in those circumstances. Care should be taken to report fully and explicitly on the influences affecting or threatening to affect injuriously the public health in the district, and on the action which has been taken, or which may still be needed, with a view to combat those influences. It is of especial importance that the Medical Officer of Health should record what action has been taken to remedy unhealthy conditions which have been reported by him in previous Annual Reports, or in special reports presented during the year under review, and that attention should be called afresh year by year to such as remain unremedied."

The Report will, therefore, contain information relating to the following subjects :—

- (1) Physical features, general character, meteorology and vital statistics of the district.
- (2) House accommodation, especially for the working class: Its adequacy and fitness. Sufficiency of open space about houses, and cleanliness of surroundings.
- (3) Sewerage and Drainage: Its sufficiency in all parts of the district.
- (4) Removal and disposal of house refuse.
- (5) Water Supply of the District: Sufficiency, wholesomeness, and freedom from risks of pollution.
- (6) Places over which the Council have supervision, *e.g.*, Lodging-houses, Slaughter-houses, Bakehouses, Dairies, Cowsheds and Milkshops, Factories and Workshops, and offensive trades.
- (7) Nuisances: Proceedings for their abatement.
- (8) Methods of dealing with Infectious Diseases: Notification; Isolation Hospital accommodation and disinfection.

The memorandum also calls attention to the new Factory and Workshops Act of 1901, which comes into force on January 1st, 1902, and which requires that:—

“The Medical Officer of Health shall, in his annual report to the Sanitary Authority, report specifically on the administration of this Act in Workshops and Work-places, and he shall send a copy of his annual report, or so much of it as deals with this subject, to the Secretary of State.”

The Municipal Borough of Cardiff originally comprised the Parishes of St. John the Baptist, and St. Mary the Virgin. Under the provisions of the Cardiff Improvement Act of 1875, the boundary of the Borough was extended so as to include the Parish of Roath and that part of the Parish of Llandaff known as Canton.

By an order of the Privy Council, dated 21st October, 1890, the Borough was divided into ten Wards.

The following tables, taken from the Census Report of 1901, give the distribution of the population in the Municipal Wards, Civil Parishes and Registration Sub-Districts, as compared with the previous Census of 1891:—

CENSUS, 1901.

TABLE I.—Inhabited Houses and Population enumerated in 1891 and 1901, in the County Borough of Cardiff:—

	Inhabited Houses.		Population.		Increase or Decrease of Population between 1891 and 1901.	
	1891	1901	1891	1901	Increase	Decrease
County Borough of Cardiff	20,476	28,009	128,915	164,420	35,505	—

TABLE II.

Inhabited Houses and Population in Registration Sub-Districts enumerated in 1891 and 1901:—

Registration Sub-Districts.	Area in Statute Acres.	Inhabited Houses.		Enumerated Population.		Increase or Decrease of Population between 1891 and 1901.	
		1891	1901	1891	1901	Increase.	Decrease.
East Cardiff ...	481	5,838	9,297	35,294	52,585	17,291	—
Central Cardiff ...	3,832	8,102	8,868	53,824	54,402	578	—
West Cardiff ...	2,060	6,536	9,844	39,797	57,433	17,636	—

TABLE III.
COUNTY BOROUGH OF CARDIFF.

CIVIL PARISHES AND WARDS.	HOUSES.				POPULATION.		
	Inhabited.	Uninhabited.		Building.	Persons.	Males.	Females.
		In Occupation.	Not in Occupation.				
CARDIFF C.B. ...	27,971	1,105	1,872	157	164,333	81,605	82,728
CIVIL PARISHES—							
Canton	7,582	121	670	22	43,256	21,215	22,041
Roath	10,789	149	451	98	61,022	30,132	30,890
St. John	5,069	384	377	23	29,704	13,872	15,832
St. Mary	4,531	451	374	14	30,351	16,386	13,965
WARDS—							
Adamsdown ...	2,067	34	94	12	14,188	7,902	6,286
Canton	3,676	48	374	21	19,727	9,516	10,211
Cathays	3,280	31	210	5	18,522	9,257	9,256
Central	1,858	556	217	20	11,286	5,428	5,858
Grangetown ...	3,236	34	217	2	20,584	10,272	10,312
Park	4,047	74	167	28	21,124	9,886	11,238
Riverside	2,931	70	175	9	17,121	8,168	8,953
Roath	2,495	51	176	24	14,605	6,801	7,804
South	1,629	174	126	2	10,320	5,653	4,667
Splott	2,752	33	116	34	16,856	8,722	8,134

VITAL STATISTICS.

POPULATION.—The preliminary report on the Census of 1901 was issued on the 23rd May, and the returns contained in it are subject to revision. In this report, the population of Cardiff on the 1st April is given as 164,420, including the shipping population. Upon the basis of the actual enumeration of the population at each Census in April, the Registrar-General estimates the probable increase which will have taken place in the middle of each succeeding year. These estimates are based on the assumption that the increase is going on annually at exactly the same rate as it did during the preceding inter-censal period.

This method, as applied to the ten years ending 1901, did not give very accurate results, as the Census returns show that the rate of increase, which had taken place in the decennium 1881—1891, was not maintained. During this period, there was an increase of the population of 46,154, or 55 per cent., this being a greater increase than in any of the 28 large towns, whilst the recently issued returns show only an increase of 35,505, or 27·5 per cent. during the ten years 1891—1901. Consequently, the estimates of population made by the Registrar-General for the years in the latter part of the decennium were considerably above the actual figure. It was not anticipated that the high rate of increase would be maintained, and the results of the recent Census show, as expected, that the estimates made during the past four or five years have been too high.

The errors that may arise from the assumption that the same rate of increase continues as in the previous decennium become, of course, more apparent in large towns, where the increment of population, owing to the introduction of fresh industries and to other causes, is more irregular than in small Urban and Rural Districts. The only remedy would seem to be a more frequent Census enumeration, as unless this is done there must of necessity be serious inaccuracies in the vital statistics of large towns, especially towards the end of the intercensal period.

An increase, however, in the population of 27·5 per cent. may be regarded as satisfactory when compared with that of other large towns. In the Census returns for 1901, amongst 22 towns each containing more than 120,000 inhabitants, two only, namely West Ham and Croydon, show a greater rate of increase than Cardiff:

The effect of the over-estimate of the population has been to produce in the death-rates and birth-rates figures, which in each case were below the real rates, this error being, of course, more marked towards the end of the decennium. The extent of this error is shown on Table XII. in the corrected rates, based on revised estimates of population, which I have made since the publication of the Census of 1901. It should be mentioned that in dealing with death-rates in different communities it is the position of one district, as compared with that of another, that is usually regarded as an index of sanitary improvement. In this respect, therefore, the relative position of Cardiff will remain practically the same, as similar errors occurred in the estimates of most of the large towns. The population of the Borough of Cardiff, brought up in the usual way to the middle of the year 1901, is estimated by the Registrar-General as 165,308, and the births and mortality given in this report are calculated upon this estimate as rates per 1,000 of the population.

The statistical tables in the appendix, forms for which are supplied by the Local Government Board, are the same as those issued last year, but differ considerably from those previously used. Four tables have, at the suggestion of the Incorporated Society of Medical Officers of Health, been substituted for Tables A and B, previously in use. Table I. supplies statistics for the ten previous years for the purpose of comparison. Table II. gives the births and deaths distributed among the localities to which they belong and the corresponding figures in previous years. An indication is thus afforded of the effect of the varying conditions of different localities upon the mortality, either from all causes or from some particular disease or class of disease. Table III. provides for the number of notified cases of infectious disease during the year, classified according to ages of patients and localities, and also the number of cases removed to hospital from each locality. Table IV. gives in a condensed form the particulars given in the more extended table of the causes of death during the year according to sex and age. Where necessary, and as far as possible, the tables of vital statistics in this Report relating to the years intermediate between 1891 and 1901 have been revised in the light of the numbers enumerated in the last Census. This has entailed a considerable amount of re-calculation, and has delayed the issue of the Report.

TABLE IV.—Births, Deaths, and Natural Increase of Population for Fifty-seven years, 1845—1901.

Year.	Population.	Births.	Deaths.	Excess of Deaths over Births.	Excess of Births over Deaths.
1845	13,385	320	324	4	...
1846	14,212	331	321	...	60
1847	15,039	331	484	153	...
1848	15,866	428	579	151	...
1849	16,693	466	864	395	...
1850	17,520	504	485	...	19
1851	18,354	575	585	...	50
1852	19,724	696	620	...	76
1853	21,094	865	644	...	221
1854	22,464	950	925	...	25
1855	23,834	1,079	641	...	438
1856	25,204	1,227	772	...	455
1857	26,574	1,367	883	...	484
1858	27,944	1,356	753	...	603
1859	29,314	1,336	826	...	510
1860	30,684	1,346	662	...	584
1861	32,054	1,223	837	...	386
1862	32,804	1,267	695	...	373
1863	33,552	1,302	862	...	440
1864	34,300	1,369	932	...	467
1865	35,048	1,382	867	...	515
1866	35,796	1,331	882	...	449
1867	36,544	1,397	873	...	524
1868	37,292	1,387	843	...	544
1869	38,640	1,414	1,005	...	409
1870	38,788	1,406	903	...	503
1871	39,356	1,391	891	...	500
1872	40,284	1,358	916	...	442
1873	41,032	1,430	995	...	435
1874	41,780	1,550	885	...	665
*1875	69,850	2,716	1,547	...	1,169
1876	72,438	2,707	1,455	...	1,252
1877	75,026	2,772	1,475	...	1,297
1878	77,614	2,795	1,468	...	1,327
1879	80,202	2,969	1,428	...	1,541
1880	82,790	2,893	1,634	...	1,295
1881	85,378	3,145	1,556	...	1,598
1882	88,603	3,399	1,724	...	1,675
1883	91,204	3,526	1,807	...	1,719
1884	93,468	3,920	2,250	...	1,670
1885	97,034	4,164	2,487	...	1,683
1886	100,736	4,270	2,269	...	2,001
1887	104,580	4,277	2,280	...	1,997
1888	108,570	4,409	2,212	...	2,197
1889	112,712	4,361	2,190	...	2,172
1890	117,012	4,600	2,469	...	2,131
1891	130,283	4,739	2,873	...	1,866
†1892	132,895	4,776	2,560	...	2,216
1893	136,168	5,110	2,794	...	2,316
1894	139,519	5,100	2,415	...	2,685
1895	142,958	5,321	2,840	...	2,481
1896	146,479	5,591	2,795	...	2,796
1897	150,087	5,279	2,534	...	2,745
1898	153,783	5,520	2,627	...	2,893
1899	157,414	5,309	2,858	...	2,451
1900	161,452	5,798	2,667	...	3,131
1901	165,308	5,206	2,596	...	2,610

* Canton and Roath taken into the Borough.

† Populations since 1892 have been revised in accordance with Census Returns, 1901.

TABLE V.

COUNTY BOROUGH OF CARDIFF.

* DENSITY OF POPULATION.

Year.				Persons per Acre.
1891	...	...	...	20·4
1892	...	...	...	20·8
1893	...	...	...	21·3
1894	..	...	...	21·8
1895	...	...	...	22·4
1896	...	...	...	22·9
1897	...	...	...	23·5
1898	...	...	...	24·1
1899	...	...	...	24·7
1900	...	...	...	25·3
1901	...	...	...	25·9

* Calculated on the basis of the revised populations, and on area of 6,373 acres.

CORRECTED DEATH-RATE.—Death-rates furnish sufficiently accurate tests of the relative vitality of districts; at any rate no more trustworthy test is available for comparing the sanitary progress of one town with another, and they may be dealt with for this purpose, provided certain possible facilities are kept in view. Very little value can be attached to death-rates for short periods; owing to the liability to fluctuations from accidental causes and to insufficient data upon which statistics for such periods are based. A reference to the table giving the annual rate of mortality at various age groups shows a very considerable difference in the death-rates in these groups. It is of little use, therefore, comparing the vital statistics of districts in which the proportion of the total population living at different age-groups differs widely. The same applies to sex distribution, as at nearly all ages the death-rate of males is higher than that of females. In comparing vital statistics of different districts, the age and sex distribution of the population is of the utmost importance in determining the relative value of their death-rates. Putting aside errors due to incorrect estimates of population, unusually high or low death-rates may in some cases be due to some peculiarity in the age or sex distribution of the population. The Registrar-General, in his Annual Summary, issues a table in which the death-rates in the large towns are corrected for age and sex distribution, and to which an explanatory note is attached.

With respect to the Table, he points out that “although it is doubtless true that the general death-rates of towns or other areas cannot safely be used for accurate comparison between such towns or areas in respect of healthiness without further correction, yet they serve as a very valuable approximate indication, for if the Column 3 be compared with Column 4, it will be seen that, whether the towns be arranged according to their recorded or according to their corrected death-rates, the order will scarcely be changed. The corrections simply alters the amount of difference between the towns, leaving the position in which they stand to each other but slightly changed.”

TABLE VI.

Recorded and Corrected Death-rates per 1,000 Persons living in 33 Great Towns during the Year 1901:—

Towns in the order of their Corrected Average Death-rates	Standard Death-rate *	Factor for correction for Sex and Age distribution †	Recorded Death-rate, 1901	Corrected Death-rate, 1901 ‡	Compara- tive Mortality Figure, 1901 §
England and Wales ...	19.15	1.0000	16.90	16.90	1,000
England and Wales less the 33 Towns ...	19.47	0.9835	15.99	15.73	931
33 Towns ...	17.72	1.0806	18.59	20.09	1,189
Croydon ...	18.37	1.0424	12.86	13.41	793
Bristol ...	18.45	1.0379	15.95	16.55	979
Brighton ...	18.94	1.0110	16.53	16.71	989
Derby ...	17.36	1.1031	15.18	16.75	991
Leicester ...	17.64	1.0855	15.88	17.24	1,020
Plymouth ...	19.70	0.9720	17.89	17.39	1,029
Cardiff ...	17.16	1.1159	15.76	17.59	1,041
Wolverhampton ...	18.30	1.0464	16.89	17.67	1,046
Norwich ...	19.99	0.9579	18.71	17.92	1,060
Halifax ...	17.28	1.1082	16.39	18.16	1,075
Portsmouth ...	18.73	1.0224	17.85	18.25	1,080
London ...	17.97	1.0656	17.63	18.79	1,112
Bradford ...	16.81	1.1391	16.81	19.15	1,133
West Ham ...	17.75	1.0788	17.95	19.36	1,146
Huddersfield ...	16.47	1.1627	16.68	19.39	1,147
Hull ...	18.23	1.0504	18.62	19.56	1,157
Nottingham ...	17.81	1.0752	18.53	19.92	1,179
Swansea ...	17.53	1.0924	18.65	20.37	1,205
Birkenhead ...	17.42	1.0993	18.72	20.58	1,218
Bolton ...	16.90	1.1331	18.24	20.67	1,223
Leeds ...	17.28	1.1082	19.27	21.36	1,264
Burnley ...	16.67	1.1487	19.01	21.84	1,292
Blackburn ...	17.05	1.1231	19.50	21.90	1,296
Oldham ...	16.72	1.1453	19.64	22.49	1,331
Sunderland ...	18.25	1.0493	21.43	22.49	1,331
Birmingham ...	17.33	1.1050	20.52	22.67	1,341
Sheffield ...	17.22	1.1120	20.41	22.70	1,343
Gateshead ...	17.83	1.0740	21.59	23.19	1,372
Newcastle-upon-Tyne ...	17.58	1.0892	21.89	23.84	1,411
Preston ...	17.42	1.0993	21.96	24.14	1,428
Salford ...	17.03	1.1244	21.66	24.35	1,441
Liverpool ...	17.44	1.0980	22.30	24.49	1,449
Manchester ...	16.90	1.1331	22.10	25.04	1,482

* The standard death-rate signifies the death-rate at all ages calculated on the hypothesis that the rates at each of twelve age periods in each town were the same as in England and Wales during the ten years 1881-90, the death-rate at all ages in England and Wales during that period having been 19.15 per 1,000.

† The factor for correction $\left\{ = \frac{19.15}{\text{Standard death-rate}} \right\}$ is the figure by which the recorded death-rate should be multiplied in order to correct for variations of sex and age distribution.

‡ The corrected death-rate is the recorded death-rate multiplied by the factor for correction.

§ The comparative mortality figure represents the corrected death-rate in each town compared with the recorded death-rate at all ages in England and Wales in 1901 taken at 1,000.

TABLE VII.

MARRIAGES.—The number of Marriages registered during the year 1901 was 1,641, corresponding to a rate of 19·8 persons married per 1,000 persons living.

A return of the number of Marriages in the Borough of Cardiff, together with the rate of persons married per 1,000 of the population, is given below :—

Year.	Number of Marriages.	Rate per 1,000 persons living.
1891	1,651	25·3
1892	1,526	22·9
1893	1,447	21·2
1894	1,480	21·2
1895	1,271	17·7
1896	1,721	23·4
1897	1,687	22·4
1898	1,525	19·8
1899	1,719	21·8
1900	1,706	21·1
1901	1,641	19·8

During the year 1901 the Births registered in the Borough were 5,206; of these 2,588 were males and 2,618 were females.

The number corresponded to an annual birth-rate of 31·4 per 1,000 persons living, as compared with 28·5, the birth-rate in England and Wales, and with 29·4, the birth-rate in the 33 large towns for the same period.

Table IX. shows the birth-rate in Cardiff, as compared with that of the large towns during the past ten years, from which it will be seen that the birth-rate in Cardiff was in each year considerably higher than the average rate in these towns.

The average annual birth-rate in Cardiff during the ten years 1891—1900 was 35·7 per 1,000.

TABLE VIII. shows the number of legitimate and illegitimate births, male and female, and the number of deaths amongst children under one year of age in each Ward and in the Union Workhouse during the year 1901 :—

WARDS.			Legitimate.		Illegitimate.		Total.		Total.	Deaths under One Year.
			M.	F.	M.	F.	M.	F.		
Central	Ward	...	140	123	2	4	142	127	269	58
South	"	...	135	137	2	2	137	139	276	50
Cathays	"	...	342	297	2	2	344	299	643	81
Park	"	...	300	289	4	3	304	292	596	77
Adamsdown	"	...	181	200	3	...	184	200	384	66
Riverside	"	...	142	140	1	3	143	143	286	67
Canton	"	...	401	402	4	7	405	409	814	109
Roath	"	...	213	236	2	2	215	238	453	58
Grangetown	"	...	384	412	4	2	388	414	802	107
Splott	"	...	294	322	1	1	295	323	618	91
Union Workhouse	"	...	8	10	23	24	31	34	65	11
TOTAL ...			2,540	2,568	48	50	2,588	2,618	5,206	775

TABLE IX.—Annual Birth-rate in Cardiff compared with that in the large towns during the ten years ending 1901 :—

33 LARGE TOWNS.	Annual Birth-rate per 1,000 living.									
	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901
London	30.9	31.0	30.1	30.5	30.2	30.0	29.5	29.4	28.6	29.0
West Ham	37.0	35.6	34.0	34.3	32.6	32.2	30.6	29.7	28.6	35.2
Croydon	26.5	26.2	25.0	25.3	25.1	25.0	25.4	25.1	24.9	26.4
Brighton	25.5	25.4	25.8	25.6	24.7	24.7	24.8	24.9	23.6	24.2
Portsmouth	28.0	28.2	27.6	27.9	27.6	26.9	26.7	26.2	25.7	27.9
Plymouth	29.1	29.9	28.8	28.7	28.8	28.5	29.7	29.8	28.4	26.8
Bristol	29.6	30.4	28.2	28.9	27.6	27.8	28.6	29.2	27.8	27.0
Swansea	35.2	35.1	32.3	33.4	30.5	29.4	28.9	27.7	26.7	30.1
Wolverhampton	33.7	34.5	34.1	35.4	34.4	35.1	35.8	35.3	33.5	31.7
Birmingham	33.3	32.7	31.7	32.4	32.6	33.3	34.0	34.3	32.7	32.1
Norwich	30.5	30.9	29.8	31.8	30.8	30.5	29.9	29.1	28.4	28.4
Leicester	32.2	32.6	31.5	30.8	30.8	30.6	29.6	29.4	28.2	29.0
Nottingham	29.4	30.2	28.6	29.7	28.9	28.9	28.9	28.9	27.7	28.4
Derby	31.1	32.2	29.3	29.1	28.0	27.1	27.4	28.1	26.9	27.8
Birkenhead	33.4	33.1	30.6	30.7	31.7	31.6	30.4	29.9	29.0	29.0
Liverpool	34.7	36.0	35.4	36.9	34.9	35.3	35.2	35.6	36.0	32.1
Bolton	32.7	33.1	31.5	32.9	31.3	32.5	30.9	29.9	34.7	27.5
Manchester	33.7	33.6	32.0	33.7	33.0	33.2	32.7	32.6	32.3	29.1
Salford	35.9	34.7	34.3	35.9	34.9	35.1	34.7	33.9	33.1	29.2
Oldham	29.1	28.6	27.2	27.5	27.2	26.1	25.3	24.8	24.1	24.6
Burnley	34.2	33.9	32.2	32.1	31.0	29.8	27.1	25.3	25.3	27.4
Blackburn	31.9	30.9	28.8	30.6	27.7	27.7	27.1	27.0	25.1	26.5
Preston	34.3	35.1	32.1	33.4	32.6	31.9	31.0	30.1	29.0	30.4
Huddersfield	23.0	23.8	20.2	21.7	20.5	23.4	22.5	23.0	22.8	22.7
Halifax	25.9	24.6	23.1	23.4	24.3	22.5	22.9	23.1	23.1	22.5
Bradford	27.2	27.7	26.7	26.1	25.5	24.6	24.0	23.4	23.1	23.1
Leeds	33.5	32.4	32.2	31.6	30.7	31.6	31.2	30.6	30.4	30.0
Sheffield	35.3	34.8	33.4	34.9	34.0	34.4	33.9	34.6	34.2	33.0
Hull	35.0	34.2	32.4	34.2	31.9	33.3	33.4	34.3	32.9	33.0
Sunderland	37.1	35.6	35.1	35.1	34.2	34.6	35.4	35.7	35.8	35.5
Gateshead	35.3	36.5	34.2	34.6	35.8	35.8	35.5	36.6	36.3	36.8
Newcastle-on-Tyne	34.3	33.7	31.0	31.2	31.1	31.3	31.7	31.4	30.4	32.1
Cardiff	35.8	37.5	36.5	37.1	38.1	35.1	35.9	33.7	35.2	31.4
Large Towns	31.9	31.9	30.7	31.3	30.7	30.7	30.3	30.2	29.4	29.4

DEATHS.—The deaths recorded during the year 1901 amounted to 2,653. So far as it has been possible to obtain the information, this number includes the deaths of persons resident in Cardiff, and who died in Public Institutions elsewhere, but is exclusive of those brought into the district from outside and dying in Public Institutions within the Borough.

These deaths were equal to an annual death-rate of 16.0 per 1,000 persons living, which corresponds closely with that published by the Registrar-General, *i.e.*, 15.7.

The "natural increase" of the population, or the excess of births over deaths, amounted to 2,610.

I have already referred to the influence of an over-estimate of the population in reducing the death-rate, and it is therefore with satisfaction that I have to record that, notwithstanding the revised estimate of the population in accordance with the recent census, the death-rate remains still one of the lowest amongst the large towns, and compares very favourably with the mortality rates throughout the country. It is also the lowest death-rate in Cardiff during the past 10 years.

Year 1901.			Death-rate from all causes.		
England and Wales	...	...	16.9	per 1,000 persons living.	
Thirty-three great Towns	...	...	18.6	"	"
Sixty-seven other large Towns	...	...	17.1	"	"
Cardiff	...	...	16.0	"	"

According to the returns of the Registrar-General, the death-rates in the large towns ranged from 12.8 per 1,000 in Croydon, 15.1 in Derby, 15.7 in Cardiff, 15.8 in Leicester, and 15.9 in Bristol, to 21.9 in Preston, 22.1 in Manchester, and 22.3 in Liverpool.

TABLE X.—Annual Death-rate per 1,000 of the 33 large Towns in England and Wales for the 10 years 1892-1901 inclusive:—

33 LARGE TOWNS.		Annual Death-rate per 1,000 living.									
		1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
London	...	20.6	21.3	17.8	19.8	18.6	18.2	18.7	19.8	18.8	17.6
West Ham	...	18.6	18.9	16.2	17.9	16.1	15.7	15.4	16.7	15.9	18.0
Croydon	...	15.8	16.3	13.2	14.5	14.2	13.1	13.9	15.0	14.6	12.9
Brighton	...	19.2	18.4	16.4	18.9	16.1	15.1	16.9	19.0	17.8	16.5
Portsmouth	...	18.5	18.2	15.2	17.8	16.6	16.2	16.3	19.7	17.3	17.9
Plymouth	...	18.8	21.2	18.3	20.1	19.6	19.0	19.5	21.7	20.8	17.9
Bristol	...	19.5	18.9	17.3	18.1	16.9	17.2	17.2	18.2	16.7	16.0
Swansea	...	20.4	19.6	17.0	18.3	16.8	15.8	18.6	18.1	17.1	18.6
Wolverhampton	...	21.5	23.3	20.7	24.4	20.0	22.5	21.3	21.8	22.5	16.9
Birmingham	...	20.4	22.2	18.6	20.3	20.8	21.6	20.0	20.8	21.5	20.5
Norwich	...	20.0	19.3	18.7	19.3	17.4	18.8	19.0	17.3	17.6	18.7
Leicester	...	18.2	20.0	14.7	17.2	16.7	17.7	16.9	17.7	17.4	15.9
Nottingham	...	18.7	18.5	17.2	19.0	17.5	18.8	17.7	20.0	19.1	18.5
Derby	...	19.3	18.2	15.0	16.7	15.7	16.0	16.8	16.9	17.5	15.2
Birkenhead	...	19.6	20.5	18.1	19.5	19.2	18.3	17.4	19.2	16.8	18.7
Liverpool	...	24.7	27.3	23.8	28.8	22.7	24.4	24.0	26.4	25.7	22.3
Bolton	...	22.8	24.1	18.8	24.0	20.7	22.0	19.4	19.9	19.5	18.2
Manchester	...	23.8	24.9	20.4	25.2	22.6	23.1	21.9	24.6	24.1	22.1
Salford	...	24.6	24.1	21.0	25.6	22.6	23.9	22.7	23.8	25.1	21.7
Oldham	...	22.0	21.0	18.6	22.0	20.3	19.2	17.6	20.5	19.6	19.6
Burnley	...	20.4	21.9	18.7	23.4	17.5	19.5	16.3	19.6	16.3	19.0
Blackburn	...	21.7	23.3	17.9	24.3	17.9	19.5	18.4	19.1	20.5	19.5
Preston	...	24.1	26.4	20.8	23.9	20.8	24.4	19.3	22.8	24.0	21.0
Huddersfield	...	18.1	17.2	15.8	16.9	16.5	16.4	15.9	16.2	16.8	16.7
Halifax	...	19.5	17.4	16.5	19.3	17.3	16.5	17.9	18.3	18.1	16.4
Bradford	...	18.0	21.0	17.0	19.9	16.5	17.5	17.6	18.4	16.4	16.8
Leeds	...	19.8	22.3	17.9	20.5	18.8	19.9	19.2	19.1	20.0	19.3
Sheffield	...	20.8	22.3	17.8	20.5	19.3	21.2	20.2	22.2	22.6	20.4
Hull	...	19.6	21.8	17.4	20.8	18.9	18.6	18.4	19.3	19.7	18.6
Sunderland	...	20.9	22.5	20.8	21.8	19.8	19.7	22.6	21.5	21.4	21.4
Gateshead	...	18.9	19.3	17.7	19.6	19.1	18.3	20.6	18.8	19.0	21.6
Newcastle-on-Tyne	...	19.7	21.0	18.3	20.5	18.5	19.1	21.4	20.6	19.5	21.9
Cardiff	...	19.2	20.4	17.3	19.9	19.0	16.8	17.0	18.1	16.5	15.7
Large Towns	...	20.7	21.6	18.1	20.7	18.9	19.1	19.0	20.2	19.5	18.6

Amongst the causes chiefly responsible for the deaths during the year the following may be mentioned; the death-rate from the several diseases being compared with the averages of the 10 years, 1891-1900 :—

						Death Rates per 1,000 Persons Living.	
						1901.	1891-1900.
Pneumonia	...	...	...	...	...	1·71	1·64
Bronchitis	...	...	...	...	...	1·26	1·38
Heart Disease	...	...	...	...	...	1·09	1·09
Phthisis	...	...	...	...	...	1·05	1·49
Whooping Cough	...	...	...	...	...	0·52	0·47
Measles	...	...	...	...	...	0·01	0·41
Diphtheria	...	...	...	...	...	0·47	0·45
Diarrhoea	...	...	...	...	...	0·45	0·79
Scarlet Fever	...	...	...	...	...	0·17	0·15
Cancer	...	...	...	...	...	0·45	0·63

On examining the Statistics in the several Registration Sub-districts within the Borough it will be seen that the general death-rate in each of these localities was respectively :—East Cardiff, 12·4 ; West Cardiff, 13·2 ; Central Cardiff, 15·0 per 1,000 persons living in each sub-district, and excluding in each case the deaths in Public Institutions. In the 10 Municipal Wards the death-rates varied from 11·0 per 1,000 in the Riverside Ward, 11·8 in the Cathays Ward, 11·9 in the Roath Ward to 16·7 in the South Ward, and 17·3 in the Central Ward.

The diseases of the respiratory organs (*i.e.*) chiefly Pneumonia and Bronchitis, caused in the Borough 532 deaths, equal to an annual death-rate of 3·2 per 1,000, the highest being 4·1 in the Central Ward, and the lowest 2·1 in the Riverside Ward.

Including in the case of the entire Borough the deaths in Public Institutions—of the 532 deaths from these causes 26 occurred in the Union Workhouse, and 6 in other Institutions, and are not accounted for in the rates for the several Wards.

INFANT MORTALITY.—The rate of Infant Mortality as measured by the proportion of deaths of infants under one year of age to 1,000 births registered was 148, as compared with 140 in the year 1900, and with 161 the average in 10 years, 1891-1900. In the large towns the rate of infant mortality in 1901 corresponded to 168. Deaths of infants under one year of age per 1,000 births, ranging from 127 in Halifax, 131 in Bristol, 132 in Huddersfield, and 141 in Croydon, to 201 in Sheffield, 204 in Salford, 216 in Preston, and 226 in Burnley.

In the Registration Sub-districts the infant mortality ranged from 135 in East Cardiff, 148 in West Cardiff, to 162 in Central Cardiff.

The rates in the sub-districts do not include the infants who died in the Cardiff Union Workhouse, amounting to a proportion of 169 under one year of age to 1,000 births in that institution during the year.

The chief causes of death amongst infants were as follows :—

CAUSES OF DEATH.						Number of Deaths under 1 Year of Age.
Diarrhoea and Enteritis	...	...	...	...	...	100
Premature Birth	...	...	...	...	...	84
Convulsions	...	...	...	...	...	69
Bronchitis	...	...	...	...	...	63
Pneumonia	...	...	...	...	...	78
Whooping Cough	...	...	...	...	...	42

The following table shows the rate of infant mortality which has prevailed in the large towns in past years, from which it will be seen that the rate of infant mortality in Cardiff is comparatively low. As mentioned in previous reports the rate of infant mortality expressed in the manner indicated is a valuable test of the sanitary condition of a district, and is not liable to the error of a calculation based on an uncertain estimate of the population. From the foregoing table it will be noticed that the diseases which proved most fatal to infants were of a preventable nature, and were probably connected with improper feeding, exposure to cold, or want of cleanliness.

The infant mortality throughout the country for the year, 1901, was as follows:—

	Deaths under 1 Year to 1,000 Births Registered.			
England and Wales	151
33 Great Towns	168
67 other Large Towns	163
Cardiff	148

The influence of weather and season upon the mortality in the district is shewn in the returns for each quarter of the year. Of the 141 deaths under one year of age from Bronchitis and Pneumonia during the year 109, or 77 per cent., occurred in the first and fourth quarter of the year. Of the 101 deaths at that age from Diarrhoea and Enteritis 61 occurred in the third or summer quarter of the year.

TABLE XI.

Large Towns.	Deaths under one year to 1,000 Births registered.										
	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	
London	155	164	143	166	161	158	167	167	160	149	
West Ham	153	170	138	168	165	171	170	197	189	171	
Croydon	123	155	121	134	150	134	150	154	132	141	
Brighton	151	169	138	164	135	142	181	173	166	161	
Portsmouth	156	164	131	175	154	168	156	197	155	163	
Plymouth	137	169	169	178	178	183	170	190	175	149	
Bristol	147	141	150	143	142	148	164	158	133	131	
Swansea	175	170	163	178	161	139	184	166	175	174	
Wolverhampton	172	208	166	218	184	217	200	184	206	163	
Birmingham	166	198	163	183	197	214	191	191	199	187	
Norwich	182	195	164	190	164	196	192	179	178	183	
Leicester	196	220	162	203	187	205	191	195	175	175	
Nottingham	167	170	174	190	168	205	178	210	196	193	
Derby	173	156	123	161	151	167	169	162	174	154	
Birkenhead	168	196	143	174	177	162	186	186	160	181	
Liverpool	181	211	179	210	173	200	184	198	186	188	
Bolton	180	199	162	212	168	186	168	181	171	172	
Manchester	179	203	160	203	176	194	197	206	189	199	
Salford	185	210	174	231	199	220	212	209	207	204	
Oldham	177	187	161	190	184	183	175	198	172	173	
Burnley	192	223	170	242	170	219	195	269	205	226	
Blackburn	198	241	169	236	171	207	206	189	220	193	
Preston	216	269	217	248	203	263	225	255	236	216	
Huddersfield	150	141	160	158	166	130	153	152	132	132	
Halifax	160	173	135	158	149	139	163	159	132	127	
Bradford	155	197	145	203	143	178	185	181	141	168	
Leeds	169	206	155	191	169	191	182	171	183	188	
Sheffield	171	191	157	197	173	197	195	194	200	201	
Hull	166	206	142	205	173	178	182	175	183	175	
Sunderland	157	188	167	189	158	163	202	175	169	182	
Gateshead	154	170	152	186	172	173	208	177	169	197	
Newcastle-on-Tyne	151	174	157	186	165	177	190	193	170	178	
Cardiff	163	179	141	179	165	150	158	164	141	148	
Large Towns	164	181	152	182	167	176	178	181	172	168	

ZYMOTIC DISEASES.—The 2,653 deaths from all causes included 284 from the seven chief zymotic diseases. The subjoined table shows the number of deaths from each of these diseases during the year 1901 :—

					No. of Deaths.
Small-pox	...	...	...	...	1
Measles	...	...	...	...	3
Scarlet Fever	...	...	...	...	29
Whooping Cough	...	...	...	...	86
Diphtheria and Membranous Croup	...	...	...	...	78
Enteric Fever	...	...	...	...	11
Diarrhoea	...	...	...	...	76

The 284 deaths from zymotic diseases were equivalent to an annual death-rate of 1·70 per 1,000 of the population, as compared with 2·06, the rate in the year 1900.

Throughout the country the zymotic death-rate for the year 1901 was as follows :—

				Death-rate from chief zymotic diseases.	
England and Wales	...	...	2·05	per 1,000 persons living	
33 Great Towns	...	...	2·68	"	"
67 other Large Towns	...	...	2·24	"	"
Cardiff	...	...	1·70	"	"

The death-rate from the zymotic diseases during the year under consideration in the large towns ranged from 1·38 per 1,000 in Huddersfield, 1·40 in Halifax, 1·52 in Croydon, and 1·53 in Plymouth, to 3·75 in Sunderland, 4·10 in Sheffield, 4·11 in West Ham, and 4·28 in Salford.

In Cardiff the zymotic death-rate varied from 1·1 in the East Registration Sub-district, and 1·4 in the Central, to 1·6 in the West Sub-district.

The local incidence of infectious disease, as shown by the number of notifications received during the year, was as follows :—West Sub-district, 884 ; East Sub-district, 848 ; Central Sub-district, 617 ; giving a proportional incidence of 15·2 per 1,000 of the population in the case of the West Sub-district, 15·8 in the East Sub-district, and 11·3 in the Central Sub-district. Amongst the diseases notified scarlet fever showed the highest number. Of the 1,362 reported cases of this disease 597 occurred in the East, 425 in the West, and 340 in the Central Sub-district.

TABLE XII.—Gives the population of each year, the annual deaths from all causes from the seven chief zymotic diseases, and the death-rates from 1852 to 1901 inclusive, in the Borough of Cardiff:—

Year.	Population.	All Causes.			Seven Chief Zymotic Diseases.		
		No. of Deaths.	Death Rates per 1,000.	Mean of 10 years.	No. of Deaths.	Death Rates per 1,000.	Mean of 10 years.
1852	19,724	620	31.4	20.2	175	8.8	8.5
1853	21,094	644	30.5		129	6.1	
1854	22,464	925	40.1		353	15.7	
1855	23,884	641	26.9		665	2.7	
1856	25,204	772	30.6		186	5.8	
1857	26,574	888	33.2		234	8.8	
1858	27,944	753	26.9		128	4.5	
1859	29,314	826	28.1		212	7.2	
1860	30,684	662	21.5		95	3.0	
1861	32,054	887	26.1		100	3.1	
1862	32,804	695	21.2	24.2	132	4.0	4.6
1863	33,552	862	25.7		268	7.0	
1864	34,300	932	27.1		250	7.3	
1865	35,048	867	24.7		161	4.5	
1866	35,796	882	24.6		192	5.3	
1867	36,544	873	23.8		116	3.1	
1868	37,292	843	22.6		109	2.9	
1869	38,040	1,005	26.4		156	4.1	
1870	38,788	903	23.2		133	3.4	
1871	39,536	891	22.5		158	3.9	
1872	40,284	916	22.7	20.0	234	5.8	3.2
1873	41,032	995	24.2		103	2.5	
1874	41,780	885	21.2		154	3.6	
*1875	69,850	1,547	22.1		294	4.2	
1876	72,438	1,455	20.8		339	4.6	
1877	75,026	1,475	19.6		255	3.5	
1878	77,614	1,468	18.9		197	2.5	
1879	80,202	1,428	17.6		137	1.7	
1880	82,790	1,634	19.7		306	3.7	
1881	85,378	1,556	18.2		164	1.9	
1882	88,603	1,724	19.4	21.5	293	3.3	3.8
1883	91,204	1,807	19.8		253	2.7	
1884	93,468	2,250	24.3		476	5.0	
1885	97,084	2,481	25.5		521	5.3	
1886	100,736	2,269	22.5		532	3.2	
1887	104,580	2,280	21.8		278	2.6	
1888	108,570	2,212	20.3		324	2.9	
1889	112,712	2,190	19.4		248	2.1	
1890	117,012	2,469	21.1		282	2.4	
1891	120,233	2,873	22.0		272	2.0	
1892	132,895	2,560	19.2	17.9	371	2.7	2.3
1893	136,168	2,794	20.4		408	2.9	
1894	139,519	2,415	17.3		257	1.8	
1895	142,958	2,840	19.9		324	2.2	
1896	146,479	2,795	19.0		362	2.4	
1897	150,087	2,534	16.8		371	2.4	
1898	153,783	2,627	17.0		396	2.5	
1899	157,414	2,858	18.1		384	2.4	
1900	161,452	2,667	16.5		402	2.4	
1901	165,308	2,653	16.0		284	1.7	

* Canton and Routh taken into the Borough.

Populations and death-rates as estimated by the Registrar-General previous to the Census of 1901:—

Year.	Estimated Population.	Death-rate.	Year.	Estimated Population.	Death-rate.
1892 ...	136,181 ...	18.7 per 1,000	1897 ...	170,063 ...	14.9 per 1,000
1893 ...	142,435 ...	19.6 "	1898 ...	170,770 ...	14.8 "
1894 ...	148,890 ...	16.2 "	1899 ...	185,826 ...	15.8 "
1895 ...	155,637 ...	18.2 "	1900 ...	194,247 ...	13.7 "
1896 ...	162,690 ...	16.8 "			

TABLE XIII.—Analysis of Deaths in the Municipal Borough of Cardiff in the Registration Sub-districts, and in each Ward in the Borough during the Year 1901.

[illegible]

TABLE XIV.

Cases of Infectious Diseases notified in the Cardiff Urban Sanitary District since the adoption of the Infectious Disease Notification Act, 1899 :—

	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901
Small Pox ...	...	9	5	4	10	1	45	7	...	...	4	8
Diphtheria ...	63	67	155	462	326	229	296	512	940	628	706	724
Croup ...	9	3	9	17	17	19	10	4	20	12	8	10
Scarlet Fever ...	335	685	1,851	816	577	484	874	758	332	184	383	1,362
Enteric Fever ...	152	130	118	105	62	79	74	117	80	94	95	73
Typhus Fever ...	...	...	...	41	1	...	1	...	...	...	4	...
Erysipelas ...	45	52	95	152	135	132	134	163	133	176	106	152
Puerperal Fever ...	4	10	12	24	19	17	21	12	18	13	15	16
Total ...	608	956	2,245	1,621	1,147	961	1,455	1,573	1,523	1,107	1,321	2,345

SMALL-POX.—Nine cases of Small-Pox occurred in the Borough during the year. Seven of these cases, including one which terminated fatally, came under observation in the first quarter of the year, and the other two in the second quarter.

On the 15th March my attention was called by the District Medical Officer to a sailor lodging in a house in Bridgend Street suffering from Small-pox of a severe hæmorrhagic type. He was at once removed to the Small-pox Hospital, where he died a few days after admission.

On making an inspection of the premises on the above-named date, I found two other persons also suffering from the same disease—both children of the occupier of the house, one a girl aged 14 years, the other a child four years old. These cases were also removed to the Hospital without delay. The source of infection in these cases was not ascertained with absolute certainty, but in all probability the disease was contracted from a lodger, a sailor, who arrived at the house in Bridgend Street on February 9th, and remained there until February 25th, when he left for London, and visited a medical practitioner living in the neighbourhood of the London Docks. The nature of the illness for which he sought medical advice did not transpire, but I ascertained subsequently that the vessel which he left the day before arriving in Cardiff had cases of Small-pox on board during the voyage.

These three persons had been suffering from Small-pox for four or five days before they came under observation, and during this time there were many opportunities for the transmission of the infection to others. In this way four other persons were infected.

A daily visit was paid to all persons who had been in contact with the patients, and on the 27th March three other inmates of the house were found to be suffering from the disease in its early stage (the occupier and two lodgers). They were immediately removed to the Hospital. All the inmates of the house had been re-vaccinated on March 15th, but as they had been previously exposed to infection for four or five days, the operation did not protect them. On the 29th March my attention was called by a medical practitioner to another person infected with Small-pox from the same source. An insurance agent, living in Glenroy Street, visited the house in Bridgend Street on March 14th, and remained some time in the room with the infected persons. His name had been accidentally omitted from the list of persons who had been in

contact with the infection, and he was not therefore visited with the others, and so escaped notice until about the second day of the appearance of the eruption. The only other inmates of his house were the man's wife and infant. The former had previously suffered from Small-pox, and the infant was vaccinated. Fortunately no further spread of the infection occurred from either of these houses.

On the 1st June the District Medical Officer for Roath notified two cases of Small-pox in a tent occupied by some gipsies, located on some spare ground in that district. The persons attacked with the disease were a woman of about thirty years of age and an infant. No trace of the source of infection in these cases could be discovered. The remaining occupants of the tents and vans on this land were re-vaccinated and visited daily for a fortnight. The infected tent and a quantity of old clothes and rags were burned on the spot, and no fresh cases occurred.

The following particulars were obtained as to the condition of these small-pox patients with respect to vaccination :—

Case.	Date.	Vaccinated or Unvaccinated.
No. 1 ...	15th March ...	Unvaccinated; terminated fatally.
„ 2 ...	„ „ ...	Vaccinated in infancy; mild case.
„ 3 ...	„ „ ...	Unvaccinated; severe confluent case.
„ 4 ...	27th March ...	Vaccinated in infancy.
„ 5 ...	„ „ ...	„ „
„ 6 ...	„ „ ...	„ „
„ 7 ...	„ „ ...	„ „
„ 8 ...	1st June ...	Unvaccinated.
„ 9 ...	„ „ ...	„

In no disease is hospital isolation of such paramount importance as in small-pox. Having regard to the history of this disease in other places, and in Cardiff in times when hospital accommodation was either entirely absent or quite inadequate, we may safely assume that our comparative immunity from the disease during the year under consideration and also during preceding years has been due to the fact that every case of small-pox which has occurred has been promptly removed to hospital as soon as it was discovered. The most recent outbreak of small-pox in Cardiff previous to the provision of adequate hospital accommodation occurred in the year 1887, when 61 cases occurred in 53 different houses, the epidemic prevailing during eight or nine months and extending to all parts of the town. Dr. Paine, who was Medical Officer of Health at the time, in his Annual Report for that year attributed the spread of the disease and the continuation of the outbreak to the absence of hospital accommodation, and to the impossibility of procuring proper isolation of the patients in their homes. Since that date the number of cases of small-pox reported annually has been as follows :—

Year ...	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.
No. of cases ...	9	5	4	10	1	45	7	0	0	4	9

Everyone of these cases was removed to the Small-pox Hospital, each one being practically a fresh introduction of the disease into the town. Even in the year 1896, when small-pox was imported from Gloucester and the neighbourhood on many occasions, it did not spread beyond the houses originally infected. There would seem, therefore, to be little cause for alarm in the introduction of a few cases of small-pox into a locality well provided with hospital accommodation. Fortunately, also, in the case of small-pox, everyone can secure protection from infection by vaccination. Although the number of available beds for small-pox patients is sufficient, the situation of the Hospital is open to the objection that it is too near to the General Hospital for Infectious Diseases, and when any extension of this building is required, the removal of the Small-pox Hospital from its present site will become necessary. The infection of small-pox is conveyed through the air to considerable distances; it is necessary, therefore, that small-pox hospitals should be in isolated positions.

A Memorandum of the Local Government Board, dated August, 1900, contains the following :—

“HOSPITALS FOR SMALL POX.—In view of the frequently demonstrated liability of Small Pox Hospitals to disseminate that disease to neighbouring communities, and in order to lessen the risk of such occurrence, the Board require the following conditions to be complied with in the case of Small Pox Hospitals provided by means of loans sanctioned by them :—

1. The site must not have within a quarter of a mile of it either a Hospital, whether for infectious diseases or not, or a Workhouse, Asylum, or any similar establishment, or a population of as many as 200 persons.
2. The site must not have within half a mile of it a population of as many as 600 persons, whether in one or more institutions, or in dwelling houses.
3. Even where the above conditions are fulfilled, a Hospital must not be used at one and the same time for the reception of cases of Small Pox and of any other class of disease.”

The following particulars have been supplied to me by the Vaccination Officer of the Cardiff Board of Guardians, and relate exclusively to the Borough of Cardiff :—During the year 1901 5,206 births were registered within the Borough, 503 children died unvaccinated ; of the remainder, 3,597, or 76·1 per cent. were successfully vaccinated ; 69 certificates of conscientious objection were granted, equal to 1·4 per cent. of the births ; 933 or 19·7 per cent. were unaccounted for. It would appear that both the number of children unaccounted for as regards vaccination and of certificates of conscientious objection are in Cardiff below the average in England and Wales. The latest available statistics show that in the year 1898 69·3 per cent. of the children born in the Country were successfully vaccinated ; 0·4 per cent. were registered as either insusceptible of vaccination or as having had Small-pox ; 2·1 per cent. as under medical certificate of postponement ; and 5·8 per cent. of whom certificates of conscientious objection to vaccination had been obtained, leaving 22·4 per cent. still unaccounted for as regards vaccination.

The Clause in the Act of 1898 relating to the “conscientious objector” was evidently inserted to discourage repeated and often vain attempts to compel those who honestly object to vaccination to submit their children to vaccination. It is doubtful, however, if it has conduced to increase vaccination, as was anticipated. The Act of 1898 expires at the end of the year 1903, and a strong feeling exists that this will be a suitable time for transferring the administration of the Vaccination Acts to sanitary authorities.

MEASLES.—Three deaths from Measles were registered as compared with 162 in the preceding year. These deaths, which occurred in the third quarter of the year, were equivalent to an annual death-rate of 0·01 per 1,000 persons living. The average death-rate from Measles during the ten years 1891-1900 was 0·41 per 1,000.

The epidemic which prevailed during the first half-year of 1900 had entirely disappeared at the commencement of the year under consideration.

The death-rate from Measles throughout the country, in the year 1901, was as follows :—

	Death-rate per 1,000.				
England and Wales	0·27
33 Great Towns	0·43
67 other Large Towns	0·25
Cardiff...	0·01

In the large towns the Measles death-rate ranged from 0·00 in Derby, 0·01 in Cardiff, 0·43 in Portsmouth, to 0·58 in Birmingham, 0·65 in Bolton, 0·77 in Blackburn, and 1·00 in Norwich.

WHOOPIING COUGH.—Eighty-six deaths were registered during the year. Of these 43 occurred in the first, 22 in the second, 13 in the third, and 8 in the fourth quarter of the year. The 86 deaths were equal to an annual death-rate of 0·52 per 1,000 persons living, and was the highest rate of any one of the chief Zymotic diseases in this year. The average death-rate from whooping cough in Cardiff during the ten years 1891-1900 was 0·47 per 1,000.

In the large towns the rate in 1901 ranged from 0·02 in Huddersfield, 0·18 in Halifax, 0·28 in Bolton, to 0·59 in Bristol, 0·72 in Sunderland, and 0·88 in Swansea.

ENTERIC FEVER.—Eleven deaths were registered from enteric fever, as compared with 25 in the preceding year. The deaths were equal to an annual mortality of 0·06 per 1,000 persons living. The average annual death-rate from enteric fever in Cardiff during the ten years 1891-1900 was 0·12 per 1,000.

The mortality from this disease throughout the country was as follows in 1901 :—

						Death-rate per 1,000.
England and Wales	...	...	...	...	...	0·16
33 Great Towns	...	...	...	...	...	0·17
67 other Large Towns	...	...	...	...	...	0·18
Cardiff...	...	...	...	...	...	0·06

During this year the death-rate from enteric fever in the 33 large towns ranged from 0·04 in Brighton, 0·06 in Cardiff, 0·18 in Wolverhampton, 0·29 in Sunderland, to 0·31 in Sheffield, and 0·34 in Nottingham.

Amongst the houses in Cardiff in which enteric fever occurred, eight were found with defective sanitary arrangements. In each case the defects were remedied under the supervision of the Inspector of Nuisances.

Of the 73 cases of enteric fever notified at all ages during the year, 24 were under the age of 15 years, and the remainder between the ages of 15 and 65.

Forty-two cases, or 57·3 per cent. of those notified, were removed to the Sanatorium.

Of the 73 cases notified during the year 22 were imported into the town from outside the district, and four were secondary cases occurring in the same house.

The following table shows the number of cases of enteric fever notified, and the mortality in Cardiff during the ten years 1891-1900 :—

TABLE XV.

Year.	Cases Notified.	No. of Deaths.	Death-rate per 1,000 persons living.	Mortality per cent. of cases notified.
1891	130	26	0·19	20·0
1892	118	24	0·18	20·3
1893	103	18	0·13	17·4
1894	62	7	0·05	11·2
1895	79	14	0·09	17·7
1896	74	13	0·08	17·5
1897	117	20	0·13	17·0
1898	80	17	0·11	21·2
1899	94	19	0·12	20·2
1900	95	25	0·15	26·3
1901	73	11	0·06	15·0

DIPHTHERIA AND MEMBRANOUS CROUP.—Seventy-eight deaths were registered as due to these diseases, giving an annual death-rate of 0·47 per 1,000, as compared with 0·45, the average rate in the ten years 1891-1900.

The mortality from diphtheria throughout the country in 1901 was as follows :—

					Death-rate per 1,000.
England and Wales	...	...	...	...	0·27
33 Great Towns	...	...	...	...	0·30
67 other Large Towns	...	...	...	...	0·28
Cardiff	...	...	...	...	0·47

The number of cases of diphtheria notified during the year was 724, which was the largest number, with one exception, since the year 1891. From the following table it will be seen that the maximum during the 10 years, 1891-1900, was reached in the year 1898, when the number amounted to 940.

TABLE XVI.

Year.	Population.	No of Cases Notified.	No. of Deaths.	Death-rate per 1,000.	Mortality per Cent. of Cases Notified.
1891	130,283	67	16	0·21	23·8
1892	132,895	155	36	0·27	23·2
1893	136,168	462	93	0·67	20·1
1894	139,519	326	59	0·42	18·0
1895	142,958	229	46	0·32	20·0
1896	146,479	296	55	0·38	18·6
1897	150,087	512	90	0·59	17·5
1898	153,783	940	129	0·84	12·6
1899	157,414	628	61	0·38	9·7
1900	161,452	706	81	0·50	11·4
1901	165,308	724	78	0·47	10·7

Diphtheria has prevailed extensively throughout South Wales during the year, especially in those districts between which there is a very free and frequent intercommunication by railway. This is shown in the following table, which gives the quarterly death-rates from Diphtheria in the Rhondda and Merthyr Tydfil Urban Districts, as compared with those in Cardiff.

	1st Quarter. Death Rates per 1,000.	2nd Quarter. Death Rates per 1,000.	3rd Quarter. Death Rates per 1,000.	4th Quarter. Death Rates per 1,000.
Rhondda	1·08	1·12	1·16	1·12
Merthyr Tydfil	0·28	0·63	0·86	0·52
Cardiff	0·31	0·44	0·46	0·68

In the last published Annual Report of the Registrar-General for the year 1899, the following paragraph appears relating to the excessive mortality from diphtheria in certain Registration Counties :—“ Arranged in decreasing order of fatality, the following counties “suffered most severely :—South Wales, where the mortality was equal to 837 per million living ; “Leicestershire, 703 per million ; and Monmouthshire, 658 per million. Out of a total of 1,217 “deaths from diphtheria and croup registered in Monmouthshire and South Wales, not fewer “than 1,015 occurred in the area covered by the following contiguous districts :—Bedwellty, “Pontypool, Newport. Cardiff, Pontypridd, Merthyr Tydfil, Neath and Swansea.”

Taking the years 1896—98, we find also from the same Report that the highest average mortality for that period (528 per million) occurred in South Wales, as compared with 261 per million, the rate of mortality in England and Wales (less London), the rate in the Registration County of London being 522, the next in order of fatality to South Wales.

The case fatality, or the proportion of deaths from diphtheria to cases notified in Cardiff during the year 1901, was at the rate of 10·7 per cent. This fatality was exceedingly low, and would seem to indicate that the disease which prevailed throughout the year was of a mild type. From the foregoing Table it will be seen that during the past four years the proportion of fatal cases of diphtheria has been unusually small; 351 cases were removed to the Sanatorium, and of these only 29, or 8·2 per cent., proved fatal.

Diphtheria was distributed throughout the district, the number of notifications ranging from 179 in the East, 189 in the Central, to 356 in the West Cardiff Registration Sub-district. The disease, as on previous occasions, occurred chiefly amongst infants and young children, 80 per cent. of the cases notified being children under 15 years of age. Diphtheria is not only a disease which attacks children in preference to adults, but it is also much more fatal when occurring in young children, the mortality rate diminishing with advancing years.

The following Table shows the number of cases notified and the mortality at certain age periods :—

TABLE XVII.

		No. of Cases Notified.		No. of Deaths.		Proportion of Deaths to Cases Notified.
Under 1 year...	...	9	...	3	...	33·3 per cent.
1—5 years	...	227	...	47	...	20·7 „
5—15 „	...	357	...	27	...	7·8 „
15—25 „	...	77	...	0	...	0·0 „
25—65 „	...	53	...	1	...	1·8 „
65 and upwards	...	1	...	0	...	0·0 „

From the foregoing it will be seen that the mortality was practically confined to children, and that although 131 cases of diphtheria were notified of persons over 15 years of age, only one death occurred amongst these.

The mortality from diphtheria in any district depends, therefore, to a considerable extent, upon the age of the persons attacked, and is, of course, influenced by the age distribution of the population of the district.

In order to ascertain the extent of this age influence upon the diphtheria death-rate in Cardiff, it is necessary to examine the question a little more closely, as at first sight it might appear that the low case mortality was entirely the result of an unusually large proportion of adult patients. This, however, does not appear to be the case, for if we take the statistics of other large towns, we find that this proportion is by no means above the average.

In Manchester, for instance, during a period of ten years 1891-1900, out of a total of 3,659 cases of diphtheria notified, 1,027 or 28 per cent. were over 15 years of age, whereas in Cardiff, during the year under consideration, only 18 per cent. of the notifications were of persons over that age. On the other hand, it would appear that the mortality amongst the cases occurring in children between the ages of 5 and 15 years was in Cardiff much below the average. Taking Manchester again, we find that out of 1,175 cases notified between those ages, 248 or 21·1 per cent. proved fatal, as compared with a case fatality of 7·8 in Cardiff in the same age period.

In Birmingham, the proportion of deaths to cases notified has been as follows :—

Year.				Case Mortality.
1897	...	...	...	25 per cent.
1898	...	...	...	20 „
1899	...	...	...	20 „
1900	...	...	...	14 „

In Bristol as follows :—

Year.				Case Mortality.
1897	...	...	...	24·7 per cent.
1898	...	...	...	20·2 "
1899	...	...	...	21·1 "
1900	...	...	...	20·1 "

In the London Hospitals of the Metropolitan Asylums Board the case mortality of diphtheria is at the rate of 28 per cent. The foregoing examples have been given for the following reasons—Firstly: Because they relate to cities of the first magnitude in which the number of cases dealt with are so large that conclusions drawn from average rates are not liable to error on account of insufficient data. Secondly: Because the returns in the Annual Reports of the Medical Officers of Health for these places are very complete, and in a form easily available for reference; and Thirdly: Because, obviously, the patients have, as regards treatment, been under the most favourable conditions for recovery.

It is not easy, therefore, to account for the low case mortality of Diphtheria in Cardiff as compared with other towns. It is now a well recognised fact that the administration of Antitoxin in the early stages of the disease has, of late years, reduced the mortality from diphtheria, and the Medical Superintendent of the Manchester Isolation Hospital refers to this in his last published report in the following terms :—"It is gratifying to note that the mortality "from diphtheria has fallen from 22·2 per cent. in the year 1897 to 18·7 per cent. in 1900. It "cannot be too frequently mentioned that the death-rate from diphtheria depends on the "promptness with which the disease is cut short by the administration of antitoxin before any "grave changes can have resulted from the diphtheria toxæmia. . . I am pleased to say "that, though a death-rate of 18·7 per cent. allows of great room for improvement, yet the "amelioration already obtained is apparently in part due to the above cause." Making every allowance, therefore, for treatment of cases by antitoxin, it would appear that our case mortality from diphtheria is considerably below the average, and it is, therefore, almost impossible to avoid the conclusion that this is in part produced by a certain proportion of cases being returned as diphtheria in Cardiff which in other places would not come under that denomination, but would be regarded as cases of some milder form of throat affection.

In the absence of any connection with local insanitary conditions, or with any infection of milk, or with any disease of the lower animals, it is probable that most of the cases of diphtheria which occurred during the year owed their origin to the ordinary mode of infection by personal contact. It is to be feared that a certain number of children suffering from diphtheria in a mild form, and who are perhaps not under medical treatment, convey the infection, and are the means of introducing it into schools. There is evidence to show that sometimes persons who have been in contact with infected persons may convey the infection without being ill themselves. The disease may also be spread by convalescents who mix with other persons before they are free from infection. With a view to discover cases coming under any of these categories, I propose to utilize more freely the resources of our Public Health Laboratory, and have arranged with Dr. Savage, our Bacteriologist, to institute next year a systematic bacteriological examination of as many of such cases as time and opportunity will permit. Dr. Savage will undertake the examinations, acting of course with the consent of the medical attendant, and with the assistance of those of our qualified pupils of the Public Health Department of the College, who may be willing to assist in the investigation. The information obtained in this way will, it is presumed, be of great assistance to the Medical Officer of Health in enabling him to take further precautionary measures against the spread of diphtheria. This procedure would also, incidentally, have the advantage of affording a valuable aid to diagnosis in doubtful cases, and it might then be possible to restrict the admission to the Sanatorium to those cases in which the bacteriological examination gave a positive result, and by this means effect a considerable saving of expense.

SCARLET FEVER.—Twenty-nine deaths were registered from scarlet fever during the year 1901. This number was equal to an annual death-rate of 0·17 per 1,000 of the population, corresponding exactly with the average in the ten years 1891—1900.

The mortality from scarlet fever throughout the country in 1901 was as follows :—

						Death-rate per 1,000.
England and Wales	...	...	...	...	...	0·13
33 Great Towns	...	...	...	...	...	0·17
67 other Large Towns	...	...	...	...	...	0·14
Cardiff...	...	...	...	...	...	0·17

The number of cases of scarlet fever notified during the year was 1,362, and from the following Table it will be seen that, with the exception of the year 1892, when the maximum of 1,851 was reached, it was the greatest number notified since the Infectious Disease Notification Act came into force.

The proportion of deaths to cases notified was comparatively low, amounting to 2·1 per cent.

TABLE XVIII.

Year.	Population.	No. of Cases Notified.	No. of Deaths.	Death-rate per 1,000.	Mortality per Cent. of Cases Notified.
1891	130,283	685	35	0·27	5·0
1892	132,895	1,851	87	0·65	4·7
1893	136,168	816	39	0·28	4·7
1894	139,519	577	8	0·05	1·3
1895	142,958	484	8	0·05	1·6
1896	146,479	874	28	0·19	3·2
1897	150,087	758	17	0·11	2·2
1898	153,783	332	8	0·05	2·4
1899	157,414	184	3	0·01	1·6
1900	161,452	383	11	0·06	2·8
1901	165,308	1,362	29	0·17	2·1

The local incidence of scarlet fever in each quarter of the year, as shown by the notifications in the Registration Sub-districts, was as follows :—

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Total.
West Cardiff	71	67	102	183	423
Central Cardiff	36	77	79	147	339
East Cardiff	60	91	116	330	597
Infirmary and Workhouse	—	—	1	2	3
Total	167	235	298	662	1362

Of the 1362 cases of Scarlet Fever notified, 638 or 46·8 per cent. were removed to the Sanatorium.

Although the number of cases removed to the Hospital was larger than in any previous year, the proportion so removed was low, the Hospital accommodation was taxed to its utmost extent, and the Medical Superintendent reported that at times the wards were unduly crowded, and that many applications for admission had of necessity to be refused. Scarlet fever prevailed therefore in an epidemic form during the whole of the year under consideration, and to a slighter extent during the latter part of the year 1900. No part of the town escaped, and as will be seen from the above figures, the number of cases reported increased in each succeeding quarter, reaching the maximum in all three divisions in the fourth quarter. The relative prevalence in the different districts obviously depended for the most part upon the facilities for the spread of infection from person to person which may have varied at times in these

localities. Previous experience shows that epidemic waves of Scarlet Fever pass at intervals of a few years over most of the large cities and towns in this Country. One attack of scarlet fever usually produces immunity from further attacks, consequently an extensive epidemic in any district has the effect of protecting the community from infection for a few years, until with the increasing population a large number of children again attain the age at which they mix freely with others in school and in public places, and a renewed outbreak occurs amongst this unprotected portion of the population.

The amount of susceptible material and the extent of the outbreak increasing with the length of interval between the epidemics.

It is not easy to estimate with accuracy the extent of the prevalence of scarlet fever during epidemic periods. Neither the death-rate nor the proportion of notifications afford absolutely reliable data. The death-rate depends of course largely upon the prevalence, but also upon the type or degree of fatality of the disease. The proportion of deaths to cases notified in Cardiff ranged during the ten years 1891-1900 from 1·3 per cent. in 1894 to 5·0 in 1891. Apparently the disease was more than twice as fatal to those attacked in the last epidemic in 1892 as to those in 1901.

It is obvious, therefore, that there was some cause operating in 1901 which had the effect of reducing the sickness rate and mortality in the epidemic of that year which was not in existence in 1892. This may be found, I think, in the more complete isolation by removal to Hospital of the infected persons.

The proportion of notifications also depends to some extent upon the type of scarlet fever prevailing at the time, as it is found in practice that when a mild type prevails a greater proportion of cases are unrecognized, and so escape notification. The returns, however, show that in 1892 the notifications numbered 1,851, or in the proportion of 14 per 1,000 persons living, as compared with 1,362, or 8·4 per 1,000 in 1901, whereas the deaths in the former year were equal to an annual rate of 0·65, against 0·17, the rate in 1901. It has been assumed by some that the Hospital isolation which is now so extensively carried out in most large towns has had little effect in checking the prevalence of scarlet fever, and it is certain that the statistics published do not warrant the hope that this disease will be ever completely eradicated by this means. But it is obvious that the removal of centres of infection from populous districts must diminish the amount of the disease, and although it is impossible to state what would have been the magnitude of the epidemic of 1901 in the absence of Hospital isolation, it is fair to assume that the marked difference in the mortality and sickness rate in 1892, as compared with 1901, was in the main due to the absence of Hospital accommodation in the former year, whereas in the more recent epidemic over 600 cases were removed to the Hospital. But quite apart from the influence of Hospital isolation upon the spread of the disease, there is an obvious advantage to the community in the lessened interference with school attendance and with various trade processes amongst the families from which the infected person has been removed, which more than compensated for the necessary expenditure of Hospital maintenance.

Although hospital isolation may never entirely remove scarlet fever from amongst us, it will, if systematically enforced, have the effect of lessening the extent of an epidemic, and of extending the interval between epidemic periods, thus reducing the sickness rate and the fatality of the disease by postponing the infection until a later age.

It has been shown by Dr. Whitelegge, upon an analysis of about 6,000 cases, that in shielding a child against infection during the first few years of life there is a double gain: every year of escape from scarlet fever renders him less and less susceptible, until finally he becomes almost insusceptible, and secondly, even if he should ultimately take the disease, every year that the attack is deferred reduces the danger to life, which it brings.

In the following table the deaths have been distributed according to age periods and seasons of the year.

1st Quarter.			2nd Quarter.			3rd Quarter.			4th Quarter.		
Ages.		Deaths.	Ages.		Deaths.	Ages.		Deaths.	Ages.		Deaths.
0—1	...	0	0—1	...	0	0—1	...	1	0—1	...	0
1—5	...	6	1—5	...	4	1—5	...	2	1—5	...	10
5—15	...	0	5—15	...	1	5—15	...	0	5—15	...	2
15 and upwards		0	15 and upwards		0	15 and upwards		0	15 and upwards		0

The enclosed chart demonstrates graphically the number of weekly notifications of Scarlet Fever during the year. A large number of certificates for exclusion from school attendance were granted, both with respect of children infected with the disease and of those who had been in contact with infected persons. The total number of notices for exclusion from the Public Elementary Schools amounted to 1,529 during the year, distributed as follows :—

NAME OF SCHOOL.	Number of Notices Sent to Schools.
Moorland Road Board School ...	127
Albany Road Board School ...	119
Sploott Road Board School ...	109
Routh Park Board School ...	97
Stacey Road Board School ...	88
Severn Road Board School ...	75
Gladstone Board School ...	64
Lansdowne Road Board School ...	59
Grange Town Board School ...	59
Adamsdown Board School ...	54
St. German's National School ...	54
Radnor Road Board School ...	51
St. Peter's Roman Catholic School ...	51
Court Road Board School ...	51
Crwys Road Board School ...	45
Wood Street Board School ...	43
Marlborough Road Board School ...	41
Higher Grade Board School ...	33
Mount Stuart Square National School ...	30
Virgil Street Board School ...	29
St. James's National School ...	28
St. John's (Queen Street) National School ...	26
St. Patrick's Roman Catholic School ...	24
St. Alban's Roman Catholic School ...	23
St. John's (Canton) National School ...	20
Intermediate Schools ...	18
Eleanor Street Board School ...	15
Grange Town National School ...	15
St. Mary's Roman Catholic School ...	15
Croft Street National School ...	14
St. David's Roman Catholic School ...	12
St. Monica National School ...	9
St. Dyfrig National School ...	8
South Church Street Board School ...	7
Bute Terrace National School ...	7
St. Cuthbert's Roman Catholic School ...	4
St. Andrew's National School ...	3
St. Mary's Mission National School ...	2
St. Paul's Roman Catholic School ...	0
	1,529

DIARRHOEA.—The deaths from diarrhoea numbered 75, being equal to an annual death-rate of 0·45 per 1,000 persons living. The average rate in the ten years 1891-1900 was 0·79 per 1,000.

The death-rate from diarrhoea throughout the country, in the year 1901, was as follows :—

						Death-rate per 1,000.
England and Wales	...	...	...	...	...	0·91
33 Great Towns	...	...	...	...	...	1·23
67 other large towns	...	...	...	...	...	1·09
Cardiff	...	...	...	...	...	0·45

The distribution of diarrhoeal mortality in Cardiff, according to the season of the year, and the various age periods, was as follows :—

			Under One Year.	One and under Five Years.	Five and under Fifteen Years.	Fifteen and under Twenty-five years.	Twenty-five and under Sixty-five.	Sixty-five years and upwards.	Total.
1st Quarter	...	...	—	—	—	—	—	—	—
2nd Quarter	...	...	4	—	1	—	—	—	5
3rd Quarter	...	...	51	4	—	—	2	1	58
4th Quarter	...	...	11	1	—	—	—	—	12
Year '1901...	...	...	66	5	1	—	2	1	75

From the preceding table it will be seen that of the 75 deaths from diarrhoea during the year 58 occurred in the 3rd quarter of the year, of these, 51 were amongst infants under one year of age.

The relation between the temperature of the air, rainfall, and the diarrhoea mortality during the third quarters of the ten years 1892-1901, is shown in the following table :—

TABLE XIX.

Diarrhoeal Mortality in the 3rd Quarters of the years 1892-1901 :—

Year.	Death-rate per 1,000.	Mean Temperature.	Rainfall in inches.
1892	2·3	60°·4	12·4
1893	2·5	61°·8	8·9
1894	0·5	57°·0	10·9
1895	2·5	59°·5	9·9
1896	2·4	58°·9	11·3
1897	2·6	59°·3	14·3
1898	2·6	60°·3	5·8
1899	3·2	63°·3	5·3
1900	1·2	59°·7	6·0
1901	1·4	60°·2	11·1

From the above it will be noticed that the maximum death-rate coincided in point of time with the maximum mean temperature and with the minimum rainfall, and that the lowest death-rate (0·5) coincided with the lowest mean temperature (57°·0), and with an abundant rainfall.

Diarrhoeal mortality amongst young children is practically confined to the summer months, and is invariably higher in hot and dry summers. The mortality appears to depend largely upon the increased activity of bacterial life which takes place during this season of the year in the superficial layers of the soil, when also fermentative and putrefactive changes more readily occur in organic substances. Infants fed entirely upon the breast suffer little from summer diarrhoea, the incidence of the disease falls almost entirely upon those fed upon cows' milk and artificial foods—substances which, unless the greatest care is exercised, rapidly undergo changes which render them unfit for food.

PLAGUE.—A fatal case of plague occurred during the year under circumstances of peculiar interest. The infection appears to have been introduced into the town by means of rats landed with a cargo of grain.

The evidence in favour of the assumption that the illness in this instance was due to infection by rats was exceedingly strong. This will be seen from the subjoined Report, which was submitted to the Health Committee shortly after the occurrence.

Fortunately the infection, as far as human beings were concerned, was limited to this single case.

TOWN HALL, CARDIFF,

26th February, 1901.

TO THE CHAIRMAN AND MEMBERS OF THE HEALTH AND PORT SANITARY COMMITTEE.

GENTLEMEN,

I beg to submit to you the following Report upon a fatal case of plague which occurred in this district on the 31st January last. On the 29th my attention was called by Dr. Campbell to a man named J. C., living at 4, Spring Gardens Terrace, and who was suspected to be suffering from plague. The symptoms were of a somewhat indefinite character, and before a decided opinion could be given as to the nature of the case a bacterial examination was necessary. Some blood and fluid from an inflamed gland were taken from the patient by Dr. Savage for examination at the Cardiff and County Public Health Laboratory, and the usual cultural and inoculation tests established incontestably the presence of the plague organism. Subsequently some similar material was forwarded to Dr. Klein, the Bacteriologist of the Local Government Board, who also reported the case to be one of plague. The condition of the patient at the time was such that it was impossible to remove him to the Hospital, and he remained at his residence until the time of his death on the 31st January. The body was removed for burial to the Cardiff Cemetery on the following day, having been completely covered with linen wrappers steeped in a solution of corrosive sublimate. On inquiry I found that J. C. complained of feeling ill on Saturday, the 26th January, and on the following Monday was too ill to go to work. Up to this date he had been working at some Grain Stores in the Collingdon Road, West Bute Dock. Further inquiry and an examination of the men employed at these Stores failed to reveal any other case of illness at all resembling Plague. An examination of the Mortality Statistics and inquiries from Medical Practitioners afforded no indication of any unusual illness in the town. It was impossible, therefore, to connect the disease in the case of J. C. with any antecedent case of the kind amongst human beings. It became necessary, therefore, to search for some other source of infection.

It is well known that rats suffer from plague, and can convey it to persons by some means as yet insufficiently explained. My attention was first directed to an unusual mortality amongst these animals by a statement made by the patient to Dr. Campbell, to the effect that rats were dying in large numbers at and in the neighbourhood of the Grain Stores.

A statement, fully confirmed by subsequent enquiries, which elicited the fact that during the two or three weeks preceding the man's illness rats had been seen in large numbers

in a dead and dying condition in this locality. I was fortunately able, on February 4th, to find in the Stores at which the patient worked two dead rats, one of which had quite recently died. These I forwarded at once to the Laboratory for examination, and the following is Dr. Savage's Report:—

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY,

February 5th, 1901.

Two rats were forwarded to me on the 4th inst., about 12.15 p.m., by Dr. Walford, the Medical Officer of Health for Cardiff. They were both dead, and the Post Mortem Examinations were commenced at once. The small rat was in a partially decomposed condition, and gave off a very offensive odour. Careful examination did not in any way show that the animal had died of plague. The large rat appeared fresh and only recently dead. Conclusive evidence was obtained that this animal had died of plague, and the plague bacilli were found in large numbers in the enlarged glands, spleen and other internal organs. It can be taken as an assured fact that at least some of the dead rats have died of plague infection. Such animals would be potent causes of infection to other rats and to human beings.

WILLIAM G. SAVAGE, M.D., Lond.

At the request of Mr. W. H. Power, C.B., the Medical Officer of the Local Government Board, I forwarded on the 5th inst, from the same stores, the body of a recently dead rat to Dr. Klein, and on the next day received the following telegram: "Rat submitted yesterday unmistakable Pestis. Medical Officer Local Government Board." In the face of these reports from two Bacteriologists acting independently, it became evident that we had to deal with infection introduced through plague-infected rats in a manner very similar to that which occurred in Sydney in January, 1900, where the first known case was apparently traced to this source of infection, and occurred in a person working at wharves upon which large numbers of rats were found dying of plague at the time. Inquiries were at once made with a view of ascertaining if any of the workmen at the Wharves and Stores on the West Dock were absent from work on account of illness, and on February 1st, through the courtesy of the Secretary of one of the Companies having warehouses and stores in this locality, I found one man, C. T., at his house in No. 8, Iron Street, who complained of feeling very ill with severe headache, prostration and nausea, and with a rapid pulse, and temperature of 103.0 F. At the same time the patient complained of extreme pain and tenderness in the left arm pit, where the axillary glands were found swollen and inflamed. From the patient's statement I found that he had been engaged quite recently in carrying dead rats to a furnace for destruction. Under these circumstances I thought it advisable to have him removed to the hospital for observation. Some blood and fluid were taken for bacterial examination, but in this case Dr. Savage reported that there was no evidence of the presence of the plague organism. The patient rapidly recovered from his illness, which was probably caused by some local lesion accompanied by inflammation of the lymphatics and glands of the arm and axilla. At a Special Meeting of the Health Committee, held on February 5th, full powers were delegated to your Chairman and Medical Officer of Health to take all necessary measures for preventing the spread of the disease, and at the same time Dr. Reece, one of the Medical Inspectors of the Local Government Board, gave valuable assistance and advice. The preventive measures which were taken consisted, in the first place, of a complete medical and sanitary inspection of what might be regarded provisionally as the infected area, namely, the Wharves, Warehouses, Stores and Mills on the West side of the West Bute Dock.

The medical inspection was accomplished with the assistance of four medical men, who were temporarily engaged to assist the Medical Officer of Health in the examination of the workmen in this area. The number examined amounted to about 700. The sanitary inspection of the area was carried out by the Medical Officer of Health and his staff of Inspectors. Those persons who had been in contact with the patient at his home were also kept under daily observation. The infected premises were thoroughly cleansed and disinfected, and most of the

articles of bedding and clothing in the sick room were destroyed. The removal of existing accumulations of refuse was carried out, and the more efficient cleansing and scavenging of the roadways in this locality insisted upon.

The Stores in which the infected rats were found, and at which the person who contracted plague worked, were completely cleansed, disinfected, and lime-washed throughout, and many old sacks were destroyed, and particular attention was paid to the exact locality where most of these dead animals were found, and which was, in fact, the rat-run on the premises, namely, a space between the matchboarded roof of the engine room and the floor of the Grain Stores above. The inspection resulted in the discovery at the time of a considerable number of dead rats on these and some of the adjoining premises, and there was evidence of the presence of many live ones. Acting on my advice, the occupiers of the warehouses, etc., forthwith engaged the services of all the known ratcatchers in the district, and about 50 or 60 traps were placed in suitable positions.

At the suggestion of Dr. Reece, it was decided to follow the example of the Authorities in Sydney, and other places in which outbreaks of plague had occurred, and offer a reward for each rat brought in; accordingly bills were posted throughout the town offering 4d. for each rat brought to the Corporation Depot, where their bodies were burned.

The Hospital on the Flat Holm, belonging to the Port Sanitary Authority, was got into readiness for the accommodation of any cases of plague which might occur, and a supply of Haffkine's prophylactic plague serum obtained for those who were willing to be inoculated. The medical examination of workmen was kept up for three weeks after the fatal termination of this case of plague, and did not result in the discovery of any further cases. The bacterial examination of rats recently dead has been continued up to the present date with negative results, and it would appear that the unusual mortality amongst these animals, which evidently existed for some weeks previous to the occurrence of the case, has altogether ceased.

These facts indicate that all danger of plague infection from rats as well as from human beings is now over, and that we have fortunately escaped any serious outbreak of the disease.

In conclusion I have to advise your Committee to urge upon the Burial Board the necessity of providing a Crematorium at the Cardiff Cemetery in accordance with the powers which they possess under a Local Act of Parliament. In all probability the cremation of the body of the deceased person might in this case have been carried out had there been the means of doing so at the Cemetery, and I may add that during the past few years several applications have been made from persons desirous of having the remains of their deceased relations cremated in Cardiff.

Further, I would advise that the construction of the Disinfection Station which you have had under consideration for some time be proceeded with with as little delay as possible.

It is most undesirable that articles containing infection from diseases, such as plague and small pox, should be taken to the disinfecting apparatus at the Sanatorium, as these diseases are not treated in this institution, and as by so doing a fresh dangerous infection is at times introduced on these premises, a proceeding attended with some danger to the inmates therein.

I am, Gentlemen, your obedient Servant,

EDWARD WALFORD, M.D.,

Medical Officer of Health.

TUBERCULOSIS.—From the statistical tables included in this Report, it will be seen that no less than 175 deaths were registered from phthisis alone, giving a death-rate of 1·05 per 1,000 of the population, one of the highest rates of any single disease.

If the other forms of tuberculosis be included, the deaths from these allied diseases amounted to 272, or 10·4 per cent. of the total deaths from all causes during the year.

Pulmonary phthisis or Consumption seems to have been at all times abnormally fatal in Wales, more particularly in North Wales. In the several Registration Counties the mean death-rates per million persons living were for the undermentioned periods, as compared with England and Wales, as follows :—

1861-70.			1871-80.		
England and Wales	...	2,475	England and Wales	...	2,116
South Wales	...	2,981	South Wales	...	2,543
North Wales (highest)	...	3,277	North Wales (highest)	...	2,574
Worcestershire (lowest)	...	1,704	Worcestershire (lowest)	...	1,481
1881-90.			1899.		
England and Wales	...	1,724	England and Wales	...	1,336
South Wales	...	2,008	South Wales	...	1,336
North Wales	...	2,077	North Wales	...	1,634
Northumberland (highest)	...	2,086	London (highest)	...	1,824
Worcestershire (lowest)	...	1,196	Huntingdonshire (lowest)	...	775

The annual death-rate from phthisis per 1,000 persons living in Cardiff during the years 1880-1901, is given below :—

TABLE XX.

YEAR.	Death-rate per 1,000.	YEAR.	Death-rate per 1,000.
1880	... 3·21	1891	... 2·78
1881	... 2·96	1892	... 1·82
1882	... 2·86	1893	... 1·68
1883	... 2·67	1894	... 1·62
1884	... 2·97	1895	... 1·67
1885	... 3·58	1896	... 1·38
1886	... 2·78	1897	... 1·99
1887	... 2·72	1898	... 1·32
1888	... 2·80	1899	... 1·32
1889	... 2·79	1900	... 1·25
1890	... 3·18	1901	... 1·05

During the ten years, 1891-1900, the total number of deaths from Phthisis in Cardiff amounted to 2,171, being equal to an annual average death-rate of 1·49 per 1,000 for that period.

Of the 2,171 deaths 452 or 20·0 per cent. occurred in the Cardiff Workhouse Infirmary.

During the past year a step in advance has been taken in connection with the prevention of Consumption by the formation of a branch for South Wales and Monmouthshire of the National Association for the Prevention of Consumption.

A public meeting was held on the 3rd October, in the Town Hall, Cardiff. The Mayor of Cardiff (Councillor Thomas Andrews, J.P.) presided, and the attendance was large, influential, and representative of the whole of South Wales. Over forty public bodies (County, Town and District Councils) were directly represented. Dr. Isambard Owen and Dr. Alfred Hillier attended the meeting on behalf of the Central Association. The following resolutions were carried unanimously :—

- (1) That a Branch of the National Association for the Prevention of Consumption and other forms of Tuberculosis for South Wales and Monmouthshire be and is hereby formed.
- (2) That an Executive Committee be appointed, to consist of members elected at the Annual General Meeting of the Branch; the President, Treasurer and Secretary to be *ex-officio* members of the Executive Committee.
- (3) The following appointments were made for the ensuing year:—President, The Right Hon. Lord Windsor, together with a large number of Vice-Presidents; Treasurer, Major-General H. H. Lee, J.P.; Hon. Sec., Dr. Eldon Pratt.

Several Sub-Committees were formed:—(1) Finance and General Purposes; (2) Educational; (3) Parliamentary.

The Association has no extensive executive powers, and its objects are chiefly directed towards educating the public in matters connected with the spread of tuberculosis, so as to enable them to adopt ordinary precautionary and preventive measures. There are several ways, however, in which the Association can assist and co-operate with public bodies, such as County Councils and Sanitary Authorities. In all probability the best practicable way of deriving full benefit from a system of voluntary notification of phthisis would be the establishment of a systematic method of visits by properly instructed persons to the houses of the poorer classes in which cases of phthisis have occurred. Such health visitors would instruct the inmates in the simple requirements for the prevention of the disease, which, after all, mainly consists in cleanliness and fresh air. It is only necessary to pass through the streets occupied by the poor, and perhaps also those occupied by persons who are not poor, to realise how completely the necessity for fresh air is ignored.

It is quite a common thing even on a warm day to see all the windows in many of the houses firmly closed. The Sanitary Authority can hardly be expected to employ a sufficient number of persons to go about the purely educational work of giving these people practical instruction in ventilation and cleanliness. Much, however, might be done by the combined action of Sanitary Authorities and the Association. The local branches might take upon itself the educational part of the work, possibly by devoting some of its funds towards the payment of such Instructors, or possibly by establishing a voluntary system of district visiting. In any case these visitors would be in the position of being able to call the attention of the Officers of the Sanitary Authority to conditions which might require their interference. But before any action in this direction is taken, the Sanitary Authority must call upon the medical practitioners in the district to notify, voluntarily, cases of phthisis under their care, as affording the best indication of the houses and localities requiring visits. Some Medical Officers of Health, whose opinions are of great value, have advocated a system of compulsory notification of phthisis, but whatever may be the advantages or disadvantages of this system, it is yet hardly ripe for discussion, as no Local Authority is in a position to adopt it. Phthisis is not included amongst the diseases which are required to be notified under the Infectious Diseases Notification Act, and although any Sanitary Authority may by resolution add certain diseases to the list, this can only be done with the consent of the Local Government Board, and as yet in no case has this consent been obtained. The reasons for this decision, or at any rate some of the reasons, are obvious. As soon as any disease comes under the operation of the Notification Act, it also comes under certain provisions of the Infectious Disease Prevention Act, provisions which are of a very restrictive character, and which are totally inapplicable to persons suffering from phthisis.

Further, it seems probable, that the majority of Medical practitioners are not in favour of the compulsory notification of this disease—this, in itself, would make the adoption of any such system unworkable. The success of notification, as a means of preventing the spread of disease, depends very largely upon the cordial co-operation of the medical profession, and there is evidence that this would not, at present, be accorded to a compulsory system.

We must rely, therefore, upon information supplied voluntarily by medical men, and there is every reason to believe that information will be readily supplied in all cases in which the Association or the Sanitary Authority can usefully take action.

One of the most important objects which the National Association for Prevention of Consumption has in view, is the establishment through its branches of Open-air Sanatoria for tuberculosis patients. This again can be best accomplished by the co-operation of Sanitary Authorities with the Association.

For those who are able to pay for the excellent accommodation provided in the Sanatoria which are now established by private enterprise in many parts of the country, no assistance is required. For the maintenance and treatment of pauper patients, Boards of Guardians are responsible.

But for that large class of the community who can only contribute in a very slight degree, or perhaps cannot contribute at all towards the expenses of maintenance, some other provision must be made if they are to have the advantage of Sanatorium treatment. For such cases the expenses must either come out of the local rates, aided by such payments as the patients can make, or out of the Association alone, or in conjunction with Local Authorities. It seems doubtful if Administrative Counties can contribute under the Isolation Hospital Act, 1893, towards the expenses of Sanatoria for phthisis until this disease becomes notifiable under the Infectious Disease Notification Act.

Sanitary Authorities, such as County Boroughs, Urban and Rural District Councils, have power under Sec. 131 Public Health Act, 1875, to provide hospitals for the reception and treatment of persons suffering from any kind of sickness within their district, and may enter into agreement with hospital managers for that purpose. They could, therefore, contribute towards Sanatoria provided by the Association, and this would appear to be the best solution of the difficulty.

At the present time the Cardiff Corporation acting as the Sanitary Authority, carries out the following preventive measures with respect to the prevention of Tuberculosis:—(1) A system of voluntary notification of Phthisis by Medical Practitioners. Upon receipt of the notification a pamphlet containing simple directions for dealing with infectious material and a short statement of the necessary precautionary measures to be adopted, is left at the house. (2) In the event of a death occurring in a house a postcard is sent to the occupier offering disinfection of the premises and infected articles free of charge. A most important part of the work of the Sanitary Authority in connection with the prevention of consumption consists in the control of the meat and milk supply. With respect to the former it will be seen in another part of this report that the inspection of meat is carried on in this district in a very complete manner. During the year no less than 44 carcases of animals intended for food were destroyed on account of tuberculosis. In each case the diagnosis of tuberculosis was confirmed, before condemnation, by a bacterial examination.

The Milk Supply has been kept under supervision, and all persons engaged in the milk trade have been required to comply strictly with the Dairies, Cowsheds, and Milkshops Order and Regulations, and arrangements have been made with the Cardiff and County Public Health Laboratory for a systematic bacterial examination of the milk supply to the district. The examination of the sputum from persons suspected to be suffering from phthisis also forms a large part of the work in the Bacteriological Laboratory. Quite recently your Health Committee has resolved to have notices fixed in all places under the control of the Sanitary Authority cautioning the public against spitting in such places, and has now under consideration the possibility of making a Bye-law forbidding, under a penalty, this dangerous and unpleasant practice.

TABLE XXI.—The following Tables show the distribution of mortality from the chief zymotic diseases, from phthisis, from diseases of the respiratory organs, and from other causes, in each street in the Borough during the year 1901 :—

CENTRAL WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Bridge Street and Little Bridge Street	1	1	2	2	6
Blackweir and Terrace	4	4
Bute Street and Terrace	1	1	2	4
Carpenters' Arms Court	1	...	1
Clytha Place	1	...	1
Canal Street	1	2	3
Canal	2	2
Caroline Street	1	...	1	2
Colum Road and Place	1	...	...	6	7
Charles Street	1	...	...	3	4
Duke Street	1	1
Dock Feeder...	1	1
David Street...	2	2	4
Eisteddfod Street	1	...	...	...	...	...	2	3	6
East Terrace	1	3	4
Edwards Street, Terrace and Place	1	...	...	1	2
Frederick Street	1	1	3	3	8
Giles Court	1	1	...	2
Gough Street	2	2	4
Guildford Street and Crescent	4	4
Green Garden Court	1	1
Havelock Street	1	...	1	1	3
Hill's Terrace and Street...	2	1	3
Jenkins' Court	2	2
Kingston Court	1	1
Love Lane	1	...	...	1	...	3	5
Little Frederick Street	2	3	5
Millicent Street	1	2	2	5
Marlborough Terrace	1	1
Mary Ann Street	1	2	5	8
North Edward Street	1	...	1
Nazareth House	2	2	6	10
North Road	2	2
Park Place	2	2
Park Street	1	...	1
Peter's Court	2	1	3
Pembroke Terrace	1	2	3
Plymouth Street	1	1
Queen Street...	1	2	3
Raven Street...	1	1
Roberts Court	1	1
Ruperra Street	1	2	2	5
Rodney Street	1	2	3
Railway Terrace	2	2
Scott Street	1	...	4	4	9
St. Mary Street	1	...	3	4
St. Andrew's Crescent	2	2
Station Terrace	2	2
Taff River	2	2
Tredegar Street	1	...	2	3
Thomas Terrace	1	...	1
Union Street...	2	...	3	12	17
Williams Court	1	...	1
Wood Street	1	...	4	5
Westgate Street	1	...	...	...	...	...	2	3
Windsor Place	1	...	...	...	1	2
Working Street	1	1
Wharton Street	1	...	1
Total...	1	1	1	1	9	14	47	121	195

SOUTH WARD.

NAME OF STREET.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthiasis.	Respiratory Diseases.	Other Causes.	Total.
Angelina Street	1	2	5	8
Alice Street	1	1	1
Adelaide Street and Place	1	...	...	...	2	3	8	8
Bute Esplanade	1	1	1
Bute Street and Place	4	11	15	15
Bute Crescent	1	1	1
Burt Street	2	2	2
Crichton Street and Place	2	...	...	...	3	5	5
Christina Street	1	1	...	...	...	1	2	7	12
Clarence Place and Embankment	2	...	...	...	...	1	3	6
Crawshay Street	1	...	1
Canal Parade and Street	1	3	4
Dudley Street and Place	2	2	4	4
Dumballs Road	2	2	2
Eleanor Street	1	1	1
Evelyn Street	2	5	7	7
Francis Street	1	1	3	5
Glamorgan Canal	5	5	5
Harrowby Street	1	...	...	...	4	5	5
Herbert Street	3	3	3
Hannah Street	2	2	2
Henry Street	1	1	1
Hunter Street	2	...	...	...	...	1	3	3
Havannah Ship	1	1	1
Hamadryad Hospital	2	2	2
John Street	1	1	1
Louisa Street	1	...	...	...	...	2	2	5
Loudoun Square	1	...	...	1	...	6	8
Mount Stuart Square	4	4	4
Margaret Street	2	3	5
Maria Street	3	...	...	1	1	2	7
North Church Street	2	2	2
Penarth Road and Terrace	1	...	1
Peel Street	1	3	4
Patrick Street	1	1	1
Pomeroy Street	1	...	...	...	...	3	4	8
South Church Street	1	...	...	...	2	3	6
South William Street	1	2	...	8
Sophia Street	1	...	4	5
Stuart Street	1	...	...	...	...	1	2	4
Timber Float	1	...	1
Tresillian Terrace	1	...	1
West Church Street	1	...	1	2
West Bute Street	1	...	...	...	...	...	...	1
Total	1	10	8	...	...	10	34	111	174

CATHAYS WARD.

NAME OF STREET.	Small Pox.	Measles.	Scarlat Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Allensbank Road and Crescent	1	2	3
Barracks	1	...	1	2	4
Cairns Street	1	2	...	1	2	5	6	17
Coburn Street	3	3
Crwys Road	1	...	...	1	...	10	12
Cathays Terrace	2	...	...	...	2	7	11
Cranbrook Street	5	5
Catherine Street	3	3
Dalton Street	1	1	2
Dogfield Street	1	...	2	2	5
Daniel Street	1	...	4	5
Darran Street	3	3
Flora Street	4	4
Fitzroy Street	1	...	...	...	...	1
Florentia Street	1	...	...	...	2	1	4
Gladys Street	1	1
Glynrhondda Street	1	1
Gower Street...	1	...	...	1
Gwynnyth Street	1	1	2
Hirwain Street	2	4	6
Harriett Street and Place	3	...	1	...	1	3	8
Llantrissant Street	2	1	3
Letty Street	3	3
Llanbleddian Gardens	1	2	3
Llandough Street	1	...	...	...	...	...	...	1
Middy Street	3	...	2	...	1	5	11
Monthermer Road	5	5
Manor Street...	1	...	...	...	...	...	2	3
Miskin Street	1	3	4
Malefant Street	2	...	...	...	...	2	5	9
Mundy Place	1	1	2
May Street	2	...	...	...	1	1	4
Merthyr Street	1	4	5
Norman Street	1	1
Richards Street	5	6	11
Robert Street	1	...	2	3
Spencer Street	1	1
Senghenydd Road and Place	1	...	1
Salisbury Road	5	5
Thesiger Street	1	...	3	5	9
Treorik Street	1	...	1
Tewkesbury Street and Place	1	1	5	7
Talgarn Street	1	1	2
Woodville Road	1	...	...	...	2	10	13
Whitchurch Road and Place	2	3	5
Wyverne Road	3	5	8
Total	5	15	1	7	7	47	139	221

ADAMSDOWN WARD.

NAME OF STREET.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Augusta Street	2	2
Ascog Street	2	2
Adams Street	1	...	1	2	4
Adamsdown Square and Place	1	...	...	...	...	...	...	1	2
Buzzard Street	1	1	2	4
Bristol Channel	2	2
Comet Street	1	1
Clyde Street	1	...	1
Cab	1	1
Cumnock Place and Terrace	1	1	2
Clifton Street	1	...	4	5
Cumrae Street and Place...	1	...	...	...	...	...	1
Constellation Street	1	...	...	...	3	3	7
Channel Dry Dock	1	1
Copper Street	1	1	2
Duffryn Street	4	3	7
Davis Street	1	2	3
Dew's Court	1	...	1
Eclipse Street	1	1	2
East Dock	4	4
Ellen Street	5	2	7
Fitzalan Road and Place	2	2
Gaol	1	1
Galston Street and Place...	2	2
Garth Street and Court	1	1
Garesfield Street	1	...	1
Gold Street	1	1
Gwendoline Street	2	2
Godfrey Street	2	2
Howard Terrace and Gardens	2	...	...	...	...	2	4
Inchmarnock Street	1	...	1
Ivor Street	1	...	...	2	3	2	8
Iron Street	1	...	...	...	...	2	2	5
Infirmary	1	4	72	77
Kyte Street	1	1
Kingarth Street	1	1	2
Kerrycrov Street	1	1
Longcross Street	1	...	...	...	...	...	...	1	2
Lead Street	1	1
Lady Margaret Terrace	1	1
Meteor Street	2	2
Metal Street	1	...	...	1	...	1	1	4
Moon Street	1	...	1
Moirra Street, Place, and Terrace	1	8	9
Morgan Street	2	2	4
North William Street	2	1	3	6
North Luton Street and Place	1	2	3
New Bute Dock Huts	1	...	2	1	4
Newport Road	7	7
Orbit Street	1	...	...	...	...	1	2
Platinum Street	2	2
Pellet Street	1	2	1	4
Piercefield Place	2	2
Planet Street...	1	1	1	1	4
Prince Leopold Street	2	2
Pendoylan Street	1	1	5	7
Roland Street	2	2
Roath Dock	4	4
South Luton Place	1	1
Sandon Place and Street	1	...	1	2	1	1	6
Sanquahar Street	1	...	1
South Terrace	1	1
System Street	1	...	...	...	...	1	4	6
Taff Street	3	3
Tin Street	1	...	...	2	2	5

ADAMSDOWN WARD—Continued.

NAME OF STREET.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Thomas' Court	1	1
Tyndall Street	1	3	14	18
Victoria Street	3	3
Windsor Road	1	...	1	1	1	3
West Dock	1	...	...	...	...	...	7	9
Zinc Street	2	2	4
Total	2	4	7	2	5	14	56	216	306

SPLOTT WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Aberdovey Street	1	...	...	...	...	1	2
Adeline Street	7	4	11
Aberystwyth Street	1	...	...	4	5
Burnaby Street	1	...	1
Bridgend Street	1	...	...	1	...	4	4	10
Cameron Street	1	...	1
Coveny Street	1	1	1	3
Caerphilly Street	2	1	3
Cornelia Street	1	1	2
Carlisle Street	1	...	...	...	4	7	12
Elaine Street...	1	1	2
Enid Street	1	1	2
Eyre Street	1	6	7
Florence Street	1	...	1	2
Habershon Street and Place	1	2	3	8	14
Howard Street and Place...	1	3	4
Hinton Street	2	2
Janet Street	1	...	1	1	2	7	12
Layard Street	4	4
Llanelly Street	1	...	...	1	...	4	6
Moorland Road	1	...	...	...	2	7	10
Marion Street	3	5	8
Milford Street	1	...	...	2	3
Menelaus Street	1	...	...	...	1
Ordell Street...	2	4	6
Portnannmoor Road	1	...	1	...	2	2	2	19	27
Pontypridd Street	1	...	3	...	1	...	5
Railway Street and Crescent	1	...	...	...	3	14	18
Swinton Street	2	2
Sanquhar Street	3	3
Seymour Street	1	...	...	...	1	4	6
SploTT Road	4	7	11
Singleton Road	3	3
Swansea Street and Terrace	1	1	1	...	1	2	6
Tenby Street...	1	1	2
Tide Fields	1	1
Walker Road...	1	...	4	5
Wimborne Street	3	3
Total...	1	1	10	1	12	9	50	141	225

CANTON WARD—Continued.

NAME OF STREET.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Springfield Place	1	...	1	1	2	3	8
Tintern Street	1	1
Thurston Street	1	1
Theobald Road	4	4
Trafalgar Cottages	1	1
Turner Road...	1	1
Turberville Place	1	...	...	1	...	1	3
Westmoreland Street	1	3	4
Wells Street	1	2	3
Wellington Street	1	2	2	5
Westbury Terrace	1	1
William Street	1	...	1
Welby Road	1	...	1
Total	2	6	8	...	10	14	59	176	275

RIVERSIDE WARD.

NAME OF STREET.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Ann Street	1	1
Beauchamp Street	2	2	4
Brook Street	1	4	5
Blackstone Street	1	...	...	1	2
Cowbridge Road	2	...	12	14
Craddock Street	1	8	9
Clare Road, Street and Gardens	3	3
Lower and Cathedral Road	1	...	...	...	3	2	6	12
Dyfrig Street	1	1	2
Despencer Street and Gardens	1	1	2
De Burgh Street	1	3	4
Eldon Road	4	4	8
Gloucester Street	1	1	1	3
Green Street	1	1	3	5
Halket Street	1	...	1	1	3
Hamilton Street	1	5	6
King's Road	1	1	...	...	1	...	9	12
Lewis Street	1	...	2	...	...	1	4
Mortimer Road	1	1	2
Machen Place	1	...	...	3	4
Mark Street	1	2	8
Mandeville Street	1	...	...	...	...	...	1
North Morgan Street	1	...	1
Neville Street and Place	1	4	5
Pontcanna Terrace and Street	2	3	5
Plantagenet Street	4	4
Picton Place	1	1
Plasturton Avenue and Place	1	...	1
Plasturton Gardens	1	...	...	...	1
Ryder Street	4	4
Rawden Place	3	3
Rennie Street	1	1	2
Smeaton Street	2	2
Severn Road	1	...	...	1	1	2	5
Sneyd Street	1	1
Stephenson Street	1	1	2
Trevethic Street	1	1
Tello Street	1	...	...	...	...	1	2
Telford Street	1	1
Talbot Street	2	2
Tudor Road	1	...	...	1	4	6
Union Workhouse	1	46	28	147	222
Wallington Street	1	...	...	...	2	9	12
Wyndham Crescent	1	...	...	1	1	3	6
Wyndham Road	1	...	3	4
Wyndham Street and Place	3	3	6
Wells Street	1	...	...	...	1	...	1	3
Total	3	7	1	7	58	62	279	411

GRANGETOWN WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.	
Allerton Street	1	1	
Amherst Street	1	1	...	...	...	1	2	5	
Bromfield Street	1	...	1	
Bedwas Street	1	2	3	
Blaenclydach Street	1	1	2	
Bradford Street	1	1	2	
Bishop Street	1	...	1	
Bromsgrove Street	1	1	2	
Corporation Road	1	2	...	...	...	...	4	5	12	
Clive Street	1	...	...	...	...	1	3	12	17	
Cambridge Street	1	...	...	...	...	1	1	3	
Compton Street	1	1	2	
Cornwall Road	1	...	...	2	3	2	8	
Clare Road	1	2	1	...	...	...	2	3	9	
Coedcae Street	1	...	...	...	2	3	6	
Cymmer Street	1	...	...	...	1	
Court Road	4	...	1	1	1	4	11	
Chester Street and Place...	...	1	...	...	...	...	...	...	2	2	5
Dorset Street and Place	5	6	11	
Devon Street and Place	1	...	7	8	
Durham Street	1	...	...	...	...	1	2	4	
Ely Harbour	1	1	
Earl Street	1	...	...	...	1	1	3	6	
Ferry Road	1	...	...	...	...	...	1	2	
Ferndale Street	1	3	4	
Grange Gardens	2	2	
Holmesdale Street and Terrace	1	...	...	...	1	2	6	10	
Hewell Street	1	1	1	2	5	
Havelock Place	1	1	
Hereford Street	1	1	
Kent Street	3	...	...	...	2	3	8	
Llanbradach Street	1	...	1	...	1	1	4	
Llanmaes Street	2	3	5	
Ludlow Street	1	...	...	...	3	4	
Monmouth Street	1	...	...	...	...	1	2	
Maitland Place	1	1	
Madras Street	4	4	
Machen Street	1	...	...	...	...	...	...	1	
Newport Street	1	...	1	...	1	...	2	3	8	
North Street	1	...	1	
North Clive Street	1	...	...	...	5	4	10	
Oakley Street	1	...	...	...	1	...	2	6	10	
Penhevad Street	1	...	1	...	1	7	10	
Penarth Road	1	4	5	7	17	
Paget Street	2	...	...	...	1	2	5	
Redlaver Street	1	...	...	...	...	4	5	
Rookwood Street	1	1	
Rutland Street	3	5	8	
River Taff	2	2	
Sevenoaks Street	1	3	4	
St. Fagans Street	1	2	...	1	...	...	1	5	
Somerset Street	1	...	1	...	2	
Stoughton Street	3	3	
Saltmead Road	1	...	...	1	2	3	7	
Stockland Street	1	6	7	
Sanatorium	1	1	11	29	4	...	...	2	4	52	
Tynant Street	1	...	...	...	...	...	1	
Thomas Street	1	2	5	8	
Taff Embankment	1	1	
Virgil Street...	2	2	
Wedmore Road	...	1	...	...	...	...	...	...	2	...	3
Warwick Street and Place	1	...	...	...	...	1	4	1	7	
Total...	...	1	3	17	41	23	5	10	15	77	162	354

ROATH WARD.

NAME OF STREET.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Pathosis.	Respiratory Diseases.	Other Cases.	Total.
Agate Street	1	...	1
Arthur Street	1	...	2	5	7
Alma Road	1	...	...	1
Albany Road	1	1
Bradley Street	2	1	3
Bertram Street	1	...	...	...	...	2	2	5
Beresford Road	1	2	3
Booker Street	1	...	1
Broadway	2	6	8
Balaclava Road	1	...	...	...	1
Connaught Road	1	1
Crofts Street	1	1
Cecil Street and Crescent	3	2	5
Clifton Street	2	...	2
Cottrell Road	1	...	...	...	...	...	4	5
Claude Road and Place	1	1	2
Cyfarthfa Street	2	2
Diamond Street	2	2	5	9
Emerald Street	1	2	6	9
Elm Street	1	3	4
Grouse Street	1	...	1
Harold Street	1	...	2	2	5
Helen Street	1	2	5	8
Marlborough Road	1	1	2
Nora Street	1	1	1	6	9
Newport Road	2	1	2	5
Oakfield Street	1	1
Partridge Road	1	...	...	2	3
Pearl Street, Crescent and Place	1	4	13	18
Princes Street	1	...	1
Ruby Street	1	...	1	...	...	...	3	5	10
Richards Terrace	1	8	9
Sapphire Street	2	2
Seymour Street	1	1
Spring Gardens Place and Terrace	1	...	...	...	...	...	...	5	6
Stacey Road	1	1	4	6
Snipe Street	2	2
Theodora Street	1	4	5
Tyler Street	1	1
Topaz Street	1	...	2	5	8
Wellfield Place and Road	1	1
Total	2	...	2	2	1	...	6	10	42	112	175

PARK WARD.

NAME OF STREET.	Small Pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Alfred Street...	1	1	4	6
Albany Road...	1	1
Arran Street...	1	...	...	7	8
Angus Street...	2	2
Arabella Street	1	...	...	...	...	2	4	7
Braeval Street	1	...	1	...	...	2	4
Bangor Street	3	3
Byron Street...	1	...	1	4	6
Bedford Street and Place...	2	8	5	15
Castle Road	1	...	...	1	3	7	12
Cyfarthfa Street	1	...	1	4	6
Crwys Road and Place	1	...	1	...	...	2	4
Convent	2	2
Donald Street	1	...	...	...	1	1	4	7	14
Dalcross Street	1	...	...	...	...	...	1
Daviot Street	1	1	...	2
Diana Street	1	...	...	1	...	6	8
Essich Street	1	1	2
Elm Street	1	3	3	7
East Grove	1	...	1
Glenroy Street	2	...	...	...	...	2	7	11
Fairoak Road	1	1
Gordon Road...	1	3	4
Inverness Place	2	9	11
Kincraig Street	1	1	2
Keppoch Street	3	2	5
Lily Street	1	...	1	1	3
Montgomery Street	1	...	...	1
Moy Road	1	3	4
Milton Street	1	1	...	6	8
Mackintosh Place	2	1	1	...	...	3	1	5	13
Ninian Road	2	2
Newport Road	1	...	1
Oxford Street	2	2	4
Penline Street	1	1
Parade	3	3
Pearson Street	1	...	1
Penywan Place	1	1
Penylan	2	...	1	3
Plasnewydd Road and Place	2	4	6
Russell Street	1	1	1	3	6
Rose Street	2	3	5
Richmond Road and Crescent	4	1	3	8
St. Peter Street	1	...	1
Strathnairn Street	2	3	5	10
Shakespeare Street	3	3
Southey Street	1
Treharris Street	1	...	...	1	2	3	11	18
Tavistock Street	1	1
Talworth Street	1	2	3
Upper Kincraig Street	1	1	2
Vere Street	1	1
Walk, The	1	1
Wordsworth Avenue	3	3
Woodland Place	1	1
Total	3	5	6	...	10	24	58	154	260

CARDIFF SANATORIUM.

The following Report of the Medical Superintendent shows that 1,177 cases were under treatment during the year, as compared with 500 during the year 1900 :—

REPORT FOR THE YEAR 1901.				AGES.									
				0 to 5 years.	5 to 15 years.	15 to 25 years.	25 to 35 years.	35 to 45 years.	45 to 55 years.	55 to 65 years.	Totals.		
I.—Remaining in Hospital on 31st December, 1900 :—													
Scarlet Fever	...	...	20	32	8	6	...	...	...	66
Enteric Fever	...	...	...	3	...	...	...	...	...	3
Diphtheria	...	...	16	35	...	4	...	...	...	55
Other Diseases (Plague)	...	...	...	...	1	...	...	...	..	1
Total	...	...	36	70	8	11	...	...	...	125
II.—Admitted during the year ending 31st December, 1901 :—													
Scarlet Fever	...	...	161	396	72	12	3	...	...	644
Enteric Fever	...	...	1	12	21	12	5	1	2	54	
Diphtheria	...	...	126	168	30	15	2	...	...	341
Small Pox	...	...	2	1	...	4	3	1	...	11	
Measles	...	...	...	...	1	...	...	...	...	1
Plague	...	...	...	...	...	1	...	...	...	1
Total	...	...	290	577	124	44	13	2	2	1052	
Total under treatment in 1901				326	647	132	55	13	2	2	1177
III.—Of the above there were Discharged													
(a) Recovered :—													
Scarlet Fever	...	...	136	357	65	17	3	...	...	578
Enteric Fever	...	...	1	15	19	8	5	1	2	51	
Diphtheria	...	...	111	182	27	15	2	...	...	337
Small Pox	...	...	2	1	...	4	2	1	...	10	
Measles	...	...	...	...	1	...	...	...	...	1
Plague	...	...	...	...	...	2	...	...	...	2
Total	...	...	250	555	112	46	12	2	2	979	
(b) Died :—													
Scarlet Fever	...	...	9	3	...	1	...	...	...	13
Enteric Fever	...	...	...	...	2	2	...	...	...	4
Diphtheria	...	...	18	12	...	...	...	...	...	30
Small Pox	...	...	...	...	...	...	1	...	...	1
Measles	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...
Other Diseases	...	...	3	...	2	...	...	...	1	6
Total	...	...	30	15	4	3	1	...	1	54	
IV.—Remaining in Hospital on 31st December, 1901 :—													
Scarlet Fever	...	...	36	68	15	...	...	...	...	119
Enteric Fever	...	...	...	...	...	2	...	...	...	2
Diphtheria	...	...	13	9	3	4	...	...	...	29
Small Pox	...	...	...	...	...	...	...	...	...	...
Measles	...	...	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...	...	...
Total	...	...	49	77	18	6	...	...	...	150
Total under treatment in 1901				326	647	132	55	13	2	2	1177

Mortality per cent. under treatment :—

Scarlet Fever	...	...	...	1·83
Enteric Fever	...	...	...	7·0
Diphtheria	...	...	...	7·6
Small Pox	...	...	...	9·1

B. W. BROAD, M.B.,

Medical Superintendent.

CARDIFF AND COUNTY PUBLIC HEALTH LABORATORY.

The following Tables show the work done in the Laboratory during the year 1901 :—

The Tables are extracted from the Annual Report to the Laboratory Joint Committee of the Bacteriologist, Dr. W. G. Savage.

TABLE I.

Specimens and Samples examined during 1901 :—

Suspected Diphtheria	...	...	...	391
„ Typhoid Fever (Serum-diagnosis)	...	...	...	122
Sputum for Tubercle Bacilli	...	...	...	197
Examination for Special Organisms :—				
(of Anthrax, 2; Gonococcus, 16; Tetanus, 1)	...	...	...	19
Pathological Examination of Growths	...	...	...	15
Examination of Urine (Chemical, &c.)	...	...	...	63
„ „ (Bacteriological)	...	...	...	13
Examination of Milk for Pathogenic Organisms :—				
(for Typhoid Bacillus, 9; for Diphtheria Bacillus, 8; Special Investigation, 21; General Examination, 3)	...	...	...	41
Diseased Meat	...	...	...	33
Pathological Fluids :—				
(for Chemical Poisons (Strychnine, 2; Phosphorus, 1), 3; Pathological and Chemical Examination, 13; Pus for Tubercle Bacilli, 7)	...	...	...	23
Blood (Pathological Examinations)	...	...	...	8
Bacteriological Examination of Soil	...	...	...	4
Investigation of suspected cases of Plague	...	...	...	4
Rats examined for Plague	...	...	...	23
Rats—Investigation of effect of Danysz Bacillus	...	...	...	9
Other special examinations (e.g., Ice Cream for Typhoid Bacillus)	...	...	...	5
Drinking Water—Bacteriological Examination	...	...	...	282
„ „ Chemical Analysis	...	...	...	250
Sewage and Sewage Effluents	...	...	...	26
Total	...	...	...	1,528

From Table I. it will be seen that the total number of specimens examined was 1,528. During 1900 the number of samples examined was 817. In Table II. the chief differences between the two years are shown.

TABLE II.

Comparison between the specimens received in 1900-1901.

Nature of Examination.	1900.	1901.	Increase.
Suspected Diphtheria ...	243	391	148
„ Typhoid Fever ...	73	122	49
Sputum for Tubercle Bacilli ...	86	197	111
Waters—Bacteriological Examination ...	119	282	163
Waters—Chemical Analysis ...	198	250	52
Bacteriological Examination of Milk ...	12	41	29
Sewage Examination ...	11	26	15
Other Examinations ...	75	219	144
Total ...	817	1,528	711

As shewn in Table II. there has been an increase of 711 samples, indicating a wider appreciation of the value of the institution and a marked increase in the work carried out.

A mere numerical enumeration, though a valuable index of work done, cannot be taken as an accurate estimation owing to the great differences in the work required for different classes of specimens and investigations. As Table II. shews, however, there has been an increase of every kind of work.

In Table III. the results of the examinations in connection with the diagnosis of Diphtheria, Typhoid Fever, and the examination of Sputum for the Tubercle Bacillus are briefly stated:—

TABLE III.

Nature of Examination.	No. of Positive Results.	No. of Negative Results.	Total.
Suspected Diphtheria ...	79	312	391
„ Typhoid Fever ...	62	60	122
Sputum for Tubercle Bacilli ...	88	109	197

The work done consists of work from Cardiff and from the Administrative County of Glamorgan, also some specimens from Swansea. Table IV. gives the number of specimens received from Cardiff and the County respectively. The samples from Swansea are included in the County figures.

In this table the results are divided into waters, including the drinking waters, the sewages and effluents, and specimens, the latter including all other examinations.

TABLE IV.

Source.			Waters Examined.	Specimens.	Total.
Cardiff	...	...	127	575	702
Administrative County	...	...	431	395	826
Total for 1901...			558	970	1,528

It is to be noticed that more specimens were received from Cardiff, but a considerably greater number of waters were examined from the County. This table, while it shows the actual number of specimens and waters examined for the two bodies, can afford only an approximate clue to the relative value of the institution to Cardiff and the County respectively. Thus the very great value of the systematic routine water examinations to the County is merely indicated by figures, while, among other things, the extensive work involved in the investigation of suspicious cases of plague, the detection of an actual case, and the investigation of the origin of the outbreak among the rats, all work for the borough, is not brought out.

INSANITARY DWELLINGS.—Since the passing of the Housing of the Working Classes Act, 1890, a considerable amount of insanitary property has been dealt with under Part II. of the Act. The provisions of this part of the Act give power to the Sanitary Authority to apply to the Magistrates for a closing order against any house on the representation of the Medical Officer of Health that it is unfit for habitation.

If after closure the premises are not put into a good sanitary condition, the Authority may pass a resolution that it is expedient to order the demolition of the dwelling.

This order must be complied with within three months from the service of notice, in default of which the Authority must demolish the building, selling all material and paying the balance, after deducting expenses, to the owner.

Amongst the dwellings which have been permanently closed, either by a closing order or by the voluntary action of the owner, during the preceding years and since the Act came into operation, the following may be mentioned:—

Mill Lane Court, 34 houses in Stanley Street, 12 houses in Leckwith Road, Kettle Court, Evans' Court, Union Buildings, Sandon Court, Dalton Court, Gainors' Court, Rising Sun Court, Jones' Court (Womanby Street), The Tunnel (Queen Street), Temperance Terrace (Working Street), Queen's Place and Masons' Arms Court. In the latter part of the year 1900, a Report was submitted to your Health Committee upon the sanitary condition of a number of small courts and insanitary dwellings, and in the following year the Report was adopted and acted upon. It dealt with 134 houses, containing an aggregate of 331 rooms, and a total population at the time of inspection amounting to 395 persons, and related to the following Courts and collections of houses:—

Name of Court.	No. of Houses.	No. of Rooms.	No. of Inhabitants.
Carpenters' Arms' Court	7	20	24
Davies' Court	3	7	5
Williams' Court	2	4	5
Robert's Court	7	21	34
Jenkins' Court	5	10	17
Giles' Court	4	12	16
Love Lane Court	5	10	20
Castle Court	5	10	15

LIST OF COURTS—Continued.

Name of Court.	No. of Houses.	No. of Rooms.	No. of Inhabitants.
Moulders' Arms Court	2	4	4
Trice's Court	3	7	7
Mack's Court	2	5	3
Rowland's Buildings...	4	10	16
Evans' Court	2	8	8
Gulliver's Court	2	6	5
Bryant's Court	2	4	4
Matthew's Court	6	13	13
Jonathan's Court	2	4	—
Dew's Court	4	12	14
Spring Garden Court	5	12	14
Crown Court	4	10	9
Harris' Court	6	15	20
Womanby Street Cottages	5	8	14
Green Garden Court...	6	23	21
Kingston Court	10	22	15
Stacey Court	4	12	19
Picton Cottages	3	6	10
Old Sea Lock	6	17	20
Stagg Terrace	13	29	40

The Report shows that the largest of these Courts contained 13 houses, the majority of them not more than five, and that the other premises were simply collections of two or three small cottages built in the yard of some larger houses in the main street, and through which access to the Court was obtained. Insufficient ventilation and lighting and inadequate air space were the conditions common to them all. Many of the houses were without back yards or through ventilation, and many depended for their water supply upon one common tap in the Court.

Water Closet accommodation was found to be generally insufficient and defective, and without water for flushing. The recommendations contained in the Report were that in the first place application should be made to the Magistrates for closing orders with respect to some of the worst and most insanitary of these premises, and that the others should be dealt with subsequently, either in the same way or under the Nuisance Removal clauses of the Public Health Act. In this way no extensive displacement of people from their houses would take place. Application was accordingly made and closing orders were obtained with respect to the following premises:—Love Lane Court, Castle Court, Moulders' Arms Court, Bryant's Court, Matthews' Court, Harris Court, Stacey Court, and Picton Cottages.

With the view of ascertaining to what extent overcrowding of dwellings existed in the Borough, I commenced in the year 1900 a special inspection in order to discover the average number of inmates per room in each house visited. The results of this inspection, which was made by the District Inspectors, is given in the Report for that year. During the year 1901, this inspection has been continued, and the following Table gives the information obtained. It is not easy to define the meaning of overcrowding, and in practice, when dealing with such cases as nuisances under the Public Health Act, each one has to be considered on its merit; but a useful standard which may serve for general purposes is that given in the Census Report of 1891, where it is proposed that tenements should be overcrowded when occupied by more than two persons per room.

The Report for the year 1900 showed that out of 1,790 houses examined, 24 or 1·3 per cent. exceeded this limit.

In the Report for the year under consideration 3,757 houses were examined. Of these 30 or 0·78 per cent. contained more than an average of two occupants per room. It is evident, therefore, that overcrowding exists to a very limited extent in Cardiff.

TABLE XXII.
HOUSE INSPECTION.

CENTRAL WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Charles Street ...	1	17	1	...	...
" " ...	1	15	1	...	...
" " ...	1	14	1	...	...
" " ...	4	13	1	...	...
" " ...	1	13	2	...	...
" " ...	3	12	1	...	...
" " ...	10	11	1	...	...
" " ...	4	10	1	...	...
" " ...	5	9	1	...	...
" " ...	3	8	1	...	...
" " ...	1	8	2	...	...
" " ...	1	7	1	...	...
Mary Ann Street	1	9	1	...	...
" " ...	1	8	1	...	...
" " ...	1	7	1	1	...
" " ...	7	6	1	...	3
" " ...	3	5	1	...	1
" " ...	30	4	1	1	6
" " ...	3	4	2	1	1
" " ...	2	2	1	...	1
Edwards Street	30	7	1	...	4
" " ...	6	7	2	...	1
" " ...	2	6	1	...	...
" " ...	3	6	2	...	1
Edwards Place ..	3	7	1	...	...
" " ...	6	6	1	...	1
" " ...	2	6	2	...	2
" " ...	1	5	1	...	...
North Edwards Street	5	6	1	...	2
" " ...	1	5	1	...	...
" " ...	1	3	1	...	...
Guildford Street "	2	8	1	...	...
" " ...	3	7	1	...	...
" " ...	1	6	1	...	...
Guildford Crescent	1	12	1	...	...
" " ...	5	9	1	...	...
" " ...	1	8	1	...	...
" " ...	1	5	1	...	...
Scott Street "	2	7	2	...	1
" " ...	2	7	1	...	...
" " ...	6	6	3	...	6
" " ...	13	6	2	...	4
" " ...	16	6	1	...	6
" " ...	1	4	3	...	1
" " ...	4	4	2	...	3
" " ...	3	4	1	1	...
Havelock Street	1	10	1	...	...
" " ...	3	6	2	...	2
" " ...	4	6	1	...	1
" " ...	2	5	3	...	2
" " ...	3	5	2	1	1
" " ...	14	5	1	...	6
" " ...	7	4	2	2	3
" " ...	5	4	1	...	2
Raven Street	2	6	3	...	1
" " ...	8	6	2	...	3
" " ...	6	6	1	...	3

CENTRAL WARD—Continued.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Eisteddfod Street ...	1	8	3	...	1
" " ...	1	7	3	...	1
" " ...	3	7	2	...	1
" " ...	6	7	1	...	3
" " ...	5	6	2	...	1
" " ...	13	6	1	...	2
" " ...	2	5	2	...	...
" " ...	1	4	2	...	1
" " ...	3	4	1	...	1
Wood Street ...	1	7	2	...	1
" " ...	15	7	1	...	4
" " ...	4	6	2	...	3
" " ...	21	6	1	...	6
" " ...	13	5	1	...	1
" " ...	2	4	1	...	1
" " ...	3	3	1	...	2
" " ...	2	2	1	...	...
Total ...	355	502	105	7	97

PARK WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Strathnairn Street ...	139	6	1	...	25
" " ...	3	6	2	...	3
Keppoch Street ...	9	7	1	...	1
" " ...	56	6	1	...	7
" " ...	1	6	2	...	1
" " ...	68	4	1	...	22
Total ...	276	35	8	...	59

RIVERSIDE WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Eldon Street ...	1	13	1	...	...
" " ...	9	8	1	...	...
" " ...	6	8	2	...	3
" " ...	1	8	3	...	1
" " ...	32	7	1	...	7
" " ...	8	7	2	...	5
" " ...	1	7	3	...	...
" " ...	34	6	1	...	1
" " ...	2	6	2	...	...
Total ...	94	70	16	...	17

SPLOTT WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Railway Street ...	4	7	1	...	3
" " " " ...	2	7	2	...	...
" " " " ...	173	6	1	1	50
" " " " ...	68	6	2	1	42
" " " " ...	2	6	3	...	2
" " " " ...	33	5	1	...	10
Hope Terrace ...	1	7	1	...	1
" " " " ...	3	6	1	...	...
Marion Street ...	1	9	1	...	...
" " " " ...	26	7	1	...	12
" " " " ...	5	7	2	...	1
" " " " ...	39	6	1	...	9
" " " " ...	35	6	2	...	10
Adeline Street ...	25	6	1	...	11
" " " " ...	46	6	2	...	36
" " " " ...	5	6	3	2	3
Wimborne Street ...	55	6	1	...	19
" " " " ...	15	6	2	...	8
Aberdovey Street ...	23	6	1	...	11
" " " " ...	12	6	2	...	7
Total... ..	573	127	31	4	235

GRANGETOWN WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Penhevad Street ...	18	7	2	...	9
" " " " ...	18	7	1	...	5
" " " " ...	22	6	2	...	8
" " " " ...	24	6	1	...	6
Amherst Street ...	9	7	1	...	7
" " " " ...	21	7	2	...	11
" " " " ...	5	6	1	...	...
" " " " ...	7	6	2	...	7
Newport Street ...	16	6	1	...	8
" " " " ...	10	6	2	...	8
Kent Street ...	15	7	1	...	1
" " " " ...	15	7	2	...	10
" " " " ...	16	6	1	...	4
" " " " ...	18	6	2	...	13
Earl Street ...	4	7	1	...	1
" " " " ...	17	7	2	...	12
Bromfield Street ...	13	6	1	...	4
" " " " ...	13	6	2	...	9
Ludlow Street ...	17	7	1	...	5
" " " " ...	7	7	2	...	4
Bradford Street... ..	15	6	1	...	5
" " " " ...	10	6	2	...	7
Total... ..	310	142	33	...	144

ADAMSDOWN WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Tin Street ...	16	6	1	...	10
" " ...	5	6	2	...	3
" " ...	1	5	1	...	...
Victoria Street ...	10	7	2	...	6
" " ...	10	7	1	...	5
" " ...	1	6	3	...	...
" " ...	1	6	2	...	1
" " ...	4	6	1	...	1
Morgan Street ...	5	6	2	...	1
" " ...	10	6	1	...	3
" " ...	1	5	2	...	1
" " ...	7	5	1	...	3
Godfrey Street ...	1	8	1	...	1
" " ...	1	7	3	...	1
" " ...	2	7	2	...	2
" " ...	4	7	1	...	1
" " ...	1	6	3	...	...
" " ...	4	6	2	...	2
" " ...	1	6	1	...	...
Pellett Street ...	2	6	2	...	...
" " ...	4	6	1	...	1
" " ...	3	5	2	...	3
" " ...	6	5	1	...	4
" " ...	6	4	1	...	1
" " ...	1	3	1	...	...
Noah Street ...	1	6	1	...	...
" " ...	6	4	1	...	2
South Terrace ...	1	6	1	...	1
" " ...	5	4	1	...	3
Tyndall Street ...	1	20	8	...	...
" " ...	2	12	1	...	...
" " ...	1	10	4	...	1
" " ...	1	10	3	...	...
" " ...	1	9	6	...	1
" " ...	2	9	5	...	2
" " ...	1	9	4	...	1
" " ...	1	9	3	...	...
" " ...	2	9	1	...	...
" " ...	1	8	6	1	...
" " ...	2	8	5	...	2
" " ...	1	8	3	...	1
" " ...	6	8	2	...	2
" " ...	2	8	1	...	...
" " ...	1	7	4	...	1
" " ...	4	7	3	...	3
" " ...	5	7	2	...	3
" " ...	7	7	1	...	1
" " ...	1	6	2	...	1
" " ...	3	6	1	...	...
Garth Street ...	1	6	1	...	1
" " ...	3	5	2	1	2
" " ...	1	5	1	...	...
" " ...	11	4	1	...	1
Dews Court ...	4	3	1	...	3
Garth " ...	4	2	1	2	...
Thomas's Court ...	1	4	2	...	...
" " ...	1	4	1	...	...
North William Street ...	3	7	2	...	2
" " " ...	3	7	1	...	2
" " " ...	11	6	2	...	6
" " " ...	15	6	1	...	8
" " " ...	1	4	1	...	...
Pendoylan Street ...	1	8	2	...	...
" " ...	2	6	3	...	...
" " ...	6	6	2	...	3

ADAMSDOWN WARD—Continued.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Pendoylan Street ...	11	6	1	...	5
" " ...	1	5	3	1	...
" " ...	1	5	2	...	1
" " ...	2	5	1	...	1
" " ...	1	4	3	...	1
" " ...	2	4	2	...	2
" " ...	3	4	1	...	2
" " Place ...	2	4	1	...	1
Ellen Street ...	1	9	1	...	...
" " ...	3	7	3	...	3
" " ...	6	7	2	...	4
" " ...	6	7	1	...	3
" " ...	5	6	2	...	3
" " ...	2	6	1	...	1
" " ...	1	5	1	...	...
" " ...	4	4	1	...	2
Orbit Street ...	8	7	1	...	...
" " ...	5	6	1	...	1
" " ...	21	4	1	...	5
Ivor Street ...	11	7	2	...	5
" " ...	6	7	1	...	1
" " ...	1	6	3	...	1
" " ...	2	6	2	...	1
" " ...	5	6	1	...	1
Roland Street ...	1	8	2	...	...
" " ...	1	6	4	...	...
" " ...	6	6	2	...	5
" " ...	17	6	1	...	7
" " ...	1	3	1	...	...
Total ...	369	593	181	5	159

CANTON WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Wells Street ...	3	7	1	...	...
" " ...	23	6	1	...	6
" " ...	11	6	2	...	7
Eldon Street ...	1	8	1	...	...
" " ...	37	7	1	...	5
" " ...	12	7	2	...	5
" " ...	43	5	1	...	5
" " ...	3	6	2	...	...
" " ...	1	5	1	...	...
Springfield Place ...	1	6	4	...	...
" " ...	13	6	2	...	9
" " ...	23	6	1	...	8
Rolls Street ...	9	6	2	...	8
" " ...	35	6	1	...	16
Lyndhurst Street ...	10	6	2	...	9
" " ...	29	6	1	...	12
Chaucery Lane ...	12	6	2	...	8
" " ...	32	6	1	...	5
Coke Street ...	1	5	2	...	1
" " ...	9	5	1	...	4
Littleton Street... ..	1	5	2	...	1
" " ...	20	5	1	...	6
Total...	329	132	34	..	115

CATHAYS WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of two occupant per room.
Middy Street	1	7	2	...	1
" " "	33	6	1	...	11
" " "	26	6	2	1	19
" " "	19	5	1	...	9
" " "	3	5	2	...	3
Flora Street	1	7	1	...	...
" " "	42	6	1	...	7
" " "	33	6	2	...	20
" " "	3	5	1	...	1
Fanny Street	1	10	1	...	...
" " "	1	9	1	...	...
" " "	7	6	1	..	2
" " "	4	4	1	...	2
Catherine Street	12	6	1	...	2
" " "	2	6	2	...	...
" " "	10	4	1	...	3
" " "	2	2	1	..	...
Letty Street	1	7	1	...	1
" " "	1	7	2	...	1
" " "	16	6	1	..	6
" " "	5	6	2	...	3
" " "	2	5	1	...	..
" " "	25	4	1	...	16
Whitchurch Place	1	8	1	...	...
" " "	3	6	2	...	2
" " "	14	6	1	...	3
" " "	1	4	1	...	1
Robert Street	69	7	1	...	11
May Street	1	7	2	...	1
" " "	1	7	1	...	...
" " "	1	6	3	...	1
" " "	19	6	2	1	9
" " "	38	6	1	...	7
" " "	2	5	2	...	2
" " "	25	5	1	1	10
" " "	2	4	1	...	...
Crwys Road	1	10	1	...	...
" " "	4	9	1	...	...
" " "	1	8	2	...	...
" " "	24	8	1	...	1
" " "	13	7	2	...	6
" " "	64	7	1	...	12
" " "	3	6	2	...	2
" " "	13	6	1	...	3
Total ...	550	273	60	3	178

ROATH WARD.

NAME OF STREET.	Number of Houses.	Number of Rooms per House.	Number of Tenements per House.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Harold Street ...	36	6	1	...	13
" " " "	14	6	2	1	10
Cecil Street ...	46	6	1	...	13
" " " "	23	6	2	1	11
" " " "	2	6	3	...	2
Diamond Street...	33	6	1	...	12
" " " "	34	6	2	...	16
" " " "	1	8	1	...	...
" " " "	2	4	1	...	2
Bertram Street ...	33	6	1	...	18
" " " "	29	6	2	1	20
" " " "	1	6	3	...	1
Tyler Street ...	8	6	1	...	1
" " " "	8	4	1	...	...
Spring Gardens Terrace	24	6	1	...	1
" " " "	21	4	1	...	9
" " " " Place	3	6	1	...	...
" " " "	49	4	1	...	20
Beresford Road ...	5	6	2	...	3
" " " "	38	6	1	...	8
" " " "	1	4	1	...	...
Blanche Street ...	2	6	2	...	...
" " " "	41	6	1	...	11
" " " "	5	4	1	...	3
Bradley Street ...	1	6	3	...	1
" " " "	9	6	2	...	7
" " " "	27	6	1	...	14
Theodora Street...	15	6	2	...	10
" " " "	36	6	1	...	16
Arthur Street ...	10	6	2	...	6
" " " "	27	6	1	...	11
Total... ..	634	176	46	3	239

SUMMARY OF FOREGOING TABLES.

WARDS.	Number of Houses.	Number of Houses with more than average of two occupants per room.	Number of Houses with more than average of one occupant per room.
Central	355	7	97
Park	276	0	59
Riverside	94	0	17
Roath	634	3	239
Splott	573	4	235
Cathays	550	3	178
Grangetown	330	0	144
South	247	8	46
Adamsdown	369	5	159
Canton	329	0	115
Grand Total	3,757	30	1,289

INSPECTION OF WORKSHOPS.—A very important duty devolves upon Sanitary Authorities in the supervision of the conditions, relating to health, under which persons engaged in workshops and work-places carry on their daily work. The Factory and Workshop Act, 1901, makes considerable alterations in, and additions to, the duties hitherto falling upon Medical Officers of Health. The Act consolidates and amends all previous Acts relating to Factories and Workshops, and contains several altogether new clauses.

The very complete report of the Town Clerk upon this Act, which has already been submitted to you, contains the following concise account of the provisions relating to Sanitation :—

Under Section 132 of the Act of 1901, the Medical Officer of Health is required, in his Annual Report, to deal specifically with the administration of the Act (so far as the matters under the charge of the Sanitary Authority are concerned), and to send a copy of this Report to the Secretary of State.

The work carried out during the year 1901 is shown in the subjoined tables.

FACTORIES.

In the case of factories a Borough Council is charged with the duty of seeing that every factory in its district is provided with means of escape in case of fire; and also has special duties in regard to domestic factories and underground bakehouses. These duties apply also in the case of workshops, and will be further referred to below. Another duty in regard to factories is the enforcement of the requirement in sec. 22 of the Public Health Acts Amendment Act, 1890, as to the provision of suitable and sufficient sanitary conveniences.

WORKSHOPS AND WORKPLACES.

In regard to workshops and workplaces, District Councils have important duties, which may be classified under four heads: (1) the sanitary condition of workshops and workplaces generally; (2) provision of means of escape from fire; (3) special sanitary regulations for bakehouses; (4) homework.

Sanitation (secs. 2, 3, 7 and 8 of Act).

X The Borough Council is made the authority responsible for the sanitary condition of the workshops and workplaces in its district, while the Factory Inspector is responsible for the sanitary condition of factories. "Sanitary conditions" include (a) the cleanliness, (b) air space, (c) ventilation, and (d) drainage of the floors of workshops and workplaces. For these purposes the provisions of sec. 91 of the Public Health Act, 1875, apply and are supplemented by additional provisions in the Factory Act. The other sanitary provisions in Part I. of the Act, viz., with regard to temperature and sanitary conveniences (secs. 6 and 9) are not brought under the law relating to public health, and will therefore be enforced by the Factory Inspector and not by Borough Councils. X

The requirements of the Act in the matters above-mentioned, which it is the duty of a Borough Council to enforce, are as follows :—

(a) *Cleanliness* (sec. 2).—Every workshop and workplace must be kept in a cleanly state and free from effluvia, and if not so kept may be dealt with by the Council as a nuisance under sec. 91 of the Public Health Act, 1875.

If the medical officer of health, or the inspector of nuisances, certifies that it is necessary for the health of the persons employed that a *workshop*, or any part of a workshop, should be limewashed, cleansed or purified, the Council may give notice to the owner or occupier of the workshop to carry out such limewashing, cleansing or purifying as the case may require, within a time specified in the notice. If the person to whom the notice is addressed fails to comply with it in the time specified, he will be liable to a penalty of 10s. for each day during which the default continues, and the Council may themselves undertake the work and recover the expense from him in a summary manner.—2 (3).

(b) *Air Space* (secs. 2, 3).—Workshops and workplaces must not be overcrowded while work is carried on so as to be dangerous or injurious to the health of the persons employed, and a workshop or workplace which is overcrowded may be dealt with as a nuisance under sec. 91 of the Public Health Act. A *workshop* is deemed to be overcrowded unless in each room at least 250 cubic feet of air space (or during overtime 400) are allowed for each person employed in the room, and the Act requires a notice to be affixed in the workshop specifying the number of persons who may be employed in each room of the workshop. In the case of a workshop not being a domestic workshop, which is occupied by night as a sleeping apartment, the Secretary of State may by order alter this amount—3 (3).

(c) *Ventilation* (sec. 2).—Every workshop and workplace must be ventilated in such a manner as to render harmless as far as practicable any gases, vapours, dust or other impurities generated in the course of the work that are a nuisance or injurious to health. Any workshop or workplace not so ventilated may be dealt with as a nuisance under sec. 91 of the Public Health Act.

This general provision is supplemented in the case of workshops by a special requirement introduced for the first time by the Act of 1901 (sec. 7) that in every room in a workshop sufficient means of ventilation must be provided and sufficient ventilation maintained, and where a standard of sufficient ventilation has been prescribed by the Secretary of State for any class of workshops, that standard must be observed. Workshops, however, *where men only are employed* are excluded from the operation of this requirement. Any workshop where this requirement is contravened may be dealt with as a nuisance.

(d) *Drainage of floors* (sec. 8).—A provision introduced for the first time by the Act of 1901, requires that in every workshop or part of a workshop in which any process is carried on which renders the floor liable to be wet to such an extent that the wet is capable of being removed by drainage, adequate means shall be provided for draining off the wet. A workshop not so drained may be dealt with as a nuisance under sec. 91 of the Public Health Act. This provision, however, does not apply to workshops in which men only are employed.

(e) *Sanitary accommodation*.—Every building used as a workshop or manufactory, or where persons are employed or intended to be employed in any trade or business, must be provided with sufficient and suitable accommodation in the way of sanitary conveniences (sec. 22). On a report from the surveyor that this requirement is not observed in the case of any building, the Council may serve a written notice on the owner or occupier requiring him to make such alterations or additions as may be required for the purpose.

(iii.) *Bakehouses.* (Secs. 97—102).

Bakehouses are either factories or workshops within the meaning of the Act according as mechanical power is or is not used in aid of the processes carried on. They are, therefore, subject to the general provisions of the Act; and the same powers will be exercised by Borough Councils in regard to bakehouses that are exercised by them in regard to factories and workshops.

A general power is also given to the Council in the case of any bakehouse which is in such a state as to be on sanitary grounds unfit for use or occupation as a bakehouse to bring the case before a court of summary jurisdiction; and the Court may thereupon impose a fine of £2 (if a first offence) or £5 (if a subsequent offence), and, either in addition to or in lieu of imposing a fine, order means to be adopted for the purpose of removing the ground of complaint—(secs. 97 and 98).

In addition to the general regulations of the Act, special sanitary regulations for bakehouses are contained in the Act. These regulations (sec. 97) require that—

(1) A bakehouse must not contain or communicate directly with a water closet, earth closet, privy or ashpit; a cistern supplying water to a bakehouse must be separate from any cistern supplying water to a water closet; and a sewage pipe or drain must not have any opening in the bakehouse. The penalty for any contravention is a fine not exceeding £2 both on the occupier and on the person letting or suffering the bakehouse to be occupied, and a further fine not exceeding 5s. for each day of occupation continues after conviction.

(2) All inside walls and ceilings of rooms and all passages and staircases must be lime-washed every six months, or coated with three coats of paints or varnish every seven years, and washed with hot water and soap every six months; if not, the bakehouse will be deemed not to be kept in conformity with the Act—99 (1).

(3) Places on the same level with a bakehouse and forming part of the same building must not be used as sleeping places unless effectually separated from the bakehouses by a partition from floor to ceiling and provided with an external glazed window 9 square feet, of which $4\frac{1}{2}$ feet must be made to open:—for a first offence a penalty of £1 and for a second or subsequent offence a penalty of £5 may be imposed both on the person occupying and on the person letting or knowingly suffering the place to be occupied—(100).

These regulations will in the case of all *retail* bakehouses be enforced by the Council; a “retail bakehouse” meaning any bakehouse or place in which no mechanical power is used, and the bread, biscuits, or confectionery baked in which are sold not wholesale, but by retail, in some shop or place occupied with the bakehouse. The medical officer of health is, for the purpose, given all the powers of entry, inspection, taking legal proceedings, and otherwise of a Factory Inspector.

Further, new duties are placed by sec. 101 of the Act on Councils in regard to underground bakehouses:—

(i) The Act provides generally that no underground bakehouse shall be used as such unless it was so used on the 17th August last: this provision it will be the duty of the Council to enforce in the case of retail bakehouses.

(ii) Moreover, after 1st January, 1904—that is, after a period of two years from the coming into force of the Act—it will not be lawful to use any underground bakehouse (whenever established) unless the Council are satisfied that it is suitable for the purpose in regard to construction, light, ventilation, and in all other respects, and have given it a certificate of suitability. This provision will apply to all bakehouses, whether wholesale or retail.

Every bakehouse will be deemed an underground bakehouse if any room used for baking, or for any process incidental thereto, is so situate that the surface of the floor is more than 3 feet below the surface of the footway of the adjoining street, or of the ground adjoining or nearest to the room.

An underground bakehouse used in contravention of these provisions will be deemed to be a workshop not kept in conformity with the Act.

(iv.) *Home Work.* (Secs. 107—115).

Powers of controlling the conditions under which certain classes of work are done in the homes of the workers are given to Borough Councils by the Act of 1901. These powers aim at the prevention of home work being done (1) in dwellings which are injurious or dangerous to the health of the workers themselves, *e.g.*, through overcrowding, want of ventilation, or other insanitary conditions; (2) in premises where there is dangerous infectious disease.

The provisions of the Act are as follows:—

(1) *Unwholesome dwellings.*—If any place in which home work is being done in connection with the business of a factory or workshop is injurious or dangerous to the health of the person working there, the Council may, by notice to the occupier of the factory or workshop, or to any contractor employed by such occupier, prohibit him from giving out work to be done in that place—(sec. 108).

The power may be exercised also in the case of work given out from places other than factories or workshops, *e.g.*, laundries, warehouses, shops, &c.—108 (2).

The power does not apply to all classes of home work, but only to those which may be specified by order of the Secretary of State. The classes of work in regard to which the power may be exercised by the Council have been fixed by order dated 11th December, 1901, as follows:—

The making, cleaning, washing, altering, ornamenting, finishing, and repairing of wearing apparel, and any work incidental thereto ;
 The making, ornamenting, mending, and finishing of lace, and of lace curtains and nets ;
 Cabinet and furniture making, and upholstery work ;
 The making of electro-plate ;
 The making of files ; and
 Fur-pulling.

(2) *Infected dwellings*.—If any inmate of a house in which home work is done is suffering from any infectious disease which is required by law to be notified to the local authority, the Council may, whether such inmate has been removed from the house or not, by order served on the occupier of any factory, workshop, or other place from which work is given out, or on any contractor employed by such occupier, prohibit him from giving out such work to any person living or working in the house during such time as the Council may fix. In an emergency, the power may be exercised by any two or more members of the Council acting on the advice of the Medical Officer of Health—(sec. 110).

This power does not apply to all classes of work, but only to such as the Secretary of State may fix. The classes of work in regard to which the power may be exercised have been fixed by order dated 11th December, 1901, as follows :—

The making, cleaning, washing, altering, ornamenting, finishing, and repairing of wearing apparel, and any work incidental thereto ;
 The making, ornamenting, mending, and finishing of lace, and of lace curtains and nets ;
 Upholstery work ; and
 Fur-pulling.

In order that the Council may be kept fully informed as to the places in its district in which homework is being done, occupiers of factories, workshops, or any place from which work is given out, and contractors employed by such occupiers are required, in regard to such classes of work as may be fixed by the Secretary of State, to keep lists showing the names and addresses of all persons employed by them, either as workmen or as contractors outside such factory, workshop or place, and the place where they are employed, and to send to the Council twice a year (viz., on or before the 1st February and the 1st August) copies of such list—sec. 107).

In the event of any occupier failing to keep or to send such lists he will be liable to a fine of £2 for the first offence, and to a fine of £5 for a second or subsequent offence. Proceedings to recover the fine may be taken by the Council—107 (5).

It will be the duty of the Council to have the lists so sent to them examined, and if the place of employment of any outworker included in the list is in another district, to furnish his name and place of employment to the Council of that district—107 (2).

The list required to be kept by the occupier or contractor will be open to inspection by any duly authorised officer by the Council ; and the Copies sent to the Council, and any particulars furnished to it by another Council, will be open to inspection by any of the Inspectors of Factories and Workshops—107 (3).

The classes of work to which these provisions apply have been fixed by order dated by the 11th December, 1901, so as to include all those that have been fixed by him in regard to (1) and (2) above, as follows :—

The making, cleaning, washing, altering, ornamenting, finishing, and repairing of wearing apparel, and any work incidental thereto ;
 The making, ornamenting, mending, and finishing of lace and of lace curtains and nets ;
 Cabinet and furniture making and upholstery work ;
 The making of electro-plate ;
 The making of files ; and
 Fur-pulling.

As it is very important that the Council should be kept supplied with the proper lists, the Town Clerk suggests that public notice of the provisions of sec. 107 should be given by means of handbills and posters.

DOMESTIC FACTORIES AND WORKSHOPS.

In some cases it will be found that dwellings in which homework is done will constitute a factory or workshop, in consequence of the employment by the occupier of the dwelling, or some part of it, of persons on work which comes within the definitions in the Act. Such places will be subject to the ordinary provisions of the Act with regard to factories and workshops. An exception, however, is made for dwellings in which no mechanical power is used and the only persons employed are members of the same family dwelling there. These places (termed in the Act "Domestic Factories" and "Domestic Workshops") are exempted from many of the provision of the Act—(sec. 111).

Domestic factories are exempted from the provisions in the Act as to the sanitation of factories, and are made subject only, so far as sanitary conditions are concerned, to the provisions in sec. 2 (1) and sec. 3; *i.e.*, if not kept in a cleanly state, or not ventilated in such a manner as to render harmless, as far as practicable, any gases, vapours, dust, or other impurities generated in the course of the work that are a nuisance or injurious to health, or so overcrowded while work is carried on as to be dangerous or injurious to the health of the workers, it is liable to be dealt with as a nuisance under sec. 91 of the Public Health Act, 1875. A domestic factory will, for the purpose of this provision, be deemed to be overcrowded unless in each room at least 250 cubic feet of air-space (or during overtime 400) are allowed for each person employed in the room. These provisions will be enforced by the Council.

Domestic workshops are exempted from the special provisions as to means of ventilation and the drainage of floors, but are otherwise, as far as sanitary conditions are concerned, to be treated as ordinary workshops—sec. 111 (4).

Domestic workshops in which work is only done at irregular intervals and does not furnish the whole or principal means of living to the family, or in which certain classes of work (*viz.*: straw-plaiting, pillow-lace making and glove making) are carried on are wholly exempt, except so far as they come within the term "workplace"—(sec. 114).

Any domestic factory and workshop, however, in which any work is carried on that has been certified by the Secretary of State as dangerous, is subject to all the provisions of the Act as though it were an ordinary factory or workshop—(sec. 112).

ADMINISTRATION.

Powers of Borough Council.—For the purpose of their duties with respect to workshops and workplaces under the Act, and under the Public Health Acts, the Borough Council and their officers are given the same powers of entry, inspection, taking legal proceedings, or otherwise as a Factory Inspector possesses (sec. 129). The powers of an Inspector as contained in sec. 119 of the Act, and include the power to enter, inspect, and examine, to take a constable in cases in which there is reason to apprehend any serious obstruction, to examine the persons found therein, to require the production of documents, &c. //

Register of Workshops.—The Act places a duty on every Borough Council to keep a Register of all workshops situate within its district (sec. 131). To assist the Council in preparing such a register, the Town Clerk understands that instructions have been given to the Factory Inspectors to allow the District Council to make copies of the register of workshops kept by the Inspector, and the Council will continue to receive (sec. 127) from the Inspector any notices of occupation of a workshop which may be sent to him.

Duties of Medical Officer of Health.—Under sec. 132 of the Act, the Council's Medical Officer of Health is required for the future in his Annual Report to the Council to report specifically on the administration of the Act in workshops and workplaces so far as the matters under the charge of the Council are concerned, and to send a copy of his report on the subject to the Secretary of State. The matters which the report should specially deal with will be the provisions as to sanitation, bakehouses and homework.

It is also the duty of the Medical Officer, if he finds any woman, young person, or child employed in a workshop *in which no abstract of the Act is posted up*, to inform the District Inspector of Factories in writing.

It will be seen that having regard to the numerous sanitary provisions of the Act and the new duties it imposes on Councils, it will add considerably to the work of the Medical Officer of Health.

Matters referred to Council by Factory Inspectors.—The Factory Inspector will, on finding in a factory or workshop, any act, neglect, or default in relation to a drain, water-closet, earth-closet, privy, ash-pit, water supply, nuisance, or other matter which is punishable or remediable under the Public Health Acts but not under the Factory Act, give notice to the Council of such act, &c.; and it will then be the duty of the Council to make enquiries into the matter, take such action as may seem proper, and inform the Inspector of the proceedings taken. If proceedings are not taken by the Council within one month, the Inspector is authorised to take the same proceedings as the Council might have taken, and to recover from the Council the expenses incurred by him which have not been recovered from any other person, and have not been incurred in any unsuccessful proceedings—(sec. 5).

The Inspector may take similar action for the purpose of enforcing in a factory or workshop the provision of means of escape in case of fire—sec. 14 (5).

In the event of a Council failing generally to carry out the provisions of the Act and the Public Health Acts with regard to factories, workshops, and workplaces, the Secretary of State may authorise a Factory Inspector during such time as he may fix to enforce those provisions. An Inspector so authorised will be entitled to recover from the Council any expenses incurred by him which are not recovered from any other person—(sec. 4).

General.—It is provided that the powers conferred by the Act on Councils shall be in addition to and not in substitution for any other power which they may possess.—(sec. 155).

INSPECTION OF FACTORIES AND WORKSHOPS.

UNDER THE FACTORY AND WORKSHOP ACTS, 1878-95, AND THE SHOP HOURS ACT, 1892-95,
AND THE SEATS FOR SHOP ASSISTANTS ACT, 1899.

During the year a large number of workshops have been inspected. The results of these inspections are given in the annexed Tables:—

Nature of Workshops Inspected.	Number on Register.	Number of Inspections.
Bakers and Sugar Boilers ...	184	703
Tailors ...	176	578
Dressmakers ...	196	344
Milliners ...	51	80
Bootmakers ...	65	152
Carpenters and Joiners ...	39	93
Laundries ...	19	77
Bottlers ...	28	69
Wheelwrights and Smiths ...	23	65
Printers and Bookbinders ...	14	63
Packers ...	21	29
Cabinet Makers and Upholsterers...	32	46
Basket, Blind, and Mat Makers ...	8	41
Picture Frame Makers ...	15	39
Blue Factory ...	1	1
Hose Manufacturers ...	3	2
Engravers and Jewellers ...	8	8
Tobacco Manufacturers ...	4	6
File Manufacturers ...	1	2

INSPECTION OF FACTORIES AND WORKSHOPS—*Continued.*

Leather Workers	...	...	12	...	8
Waggon Builders	...	...	11	...	1
Pipe and Tile Manufacturers	...	...	2	...	1
Oilskin Manufacturers	...	...	8	...	4
Plaster Moulders	...	...	3	...	4
Umbrella Makers	...	...	4	...	5
Cycle and Machine Manufacturers	...	...	15	...	29
Engineers and Electricians	...	...	18	...	15
Plumbers	...	...	14	...	3
Gas Works	...	...	1	...	1
Rope Works	...	...	2	...	3
Maltsters	...	...	1	...	1
Furriers	...	...	1	...	2
Total	...	...	980		2,475

Notices of New Workshops from Inspector of Factories under Factory Act, 1891, Sec. 26, Sub. 2, Factory Act, 1895, Sec. 41 = 69.

Notices from Inspector of Factories *re* Sanitary Defects in Workshops, Sec. 4, Factory and Workshops Act, 1878 = 17.

Notices sent by Sanitary Authority to Inspector of Factories under Sec. 3, Factory and Workshop Act, 1891 = 41.

Notices sent by Sanitary Authority to Inspector of Factories *re* Overworking in Workshops = 5.

NUISANCES IN WORKSHOPS.

	Bakers.	Tailors.	Dressmakers.	Carpenters.	Leather Workers.	Cabinet Makers.	Milliners.	Basket and Blind Makers.	Printers.	Smiths.	Picture Frame Makers.	Laundries.	Bottlers.	Bootmakers.	Tobacco Manufacturers.	Plaster Moulders.	Cycle Manufacturers.	Engravers.	Packers.	Tile Factory.	Rope Works.
W.C. Accommodation provided	2	3	...	3	...	1	...	2	1	2	...	...	2	...	...	...	1	...	1	1	...
Drains trapped and repaired	16	20	10	4	...	2	1	2	3	1	2	3	2	2	2	1	...	...	...	...	...
Flushing Apparatus provided	3	3	3	3	...	4	1	1	...	5	1	1	1	...	...	...	...	...	...	...	...
W.C.'s cleansed and repaired	7	6	3	2	...	4	1	1	...	4	...	...	...	...	...	...	2	...	...	...	...
Limewashing	187	11	4	2	3	1	...	1	1	2	3	...	2	3	...	...	1	...	...	...	...
Workrooms ventilated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Paving Roofs, &c., repaired	...	2	9	4	...	...	...	...	1	...	...	4	...	3	1	...	...	...	...	...	...
Underground Workshops abolished	12	13	6	1	1	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Stables drained	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Accumulations	1	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Manure Pits erected and drained	11	7	...	...	...	...	...	...	...	2	...	...	1	1	...	...	...	...	1	...	...
Boilers ventilated	1	...	...	1	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Workrooms overcrowded	...	2	1	...	...	1	1	...	...	...	...	3	...	...	...	...	...	...	...	...	...
Black smoke	...	...	...	...	...	...	...	...	1	2	...	...	2	...	...	...	...	...	...	...	...
W.C. and stable in communication	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Upstairs W.C. ventilated	2	1	...	...	...	...	...	...	1	1	1	...	...	1	...	...	...	...	...	...	...
Nuisance of animals	3	...	...	...	...	...	...	...	...	...	...	1	...	3	...	...	...	...	...	...	...
Water put on	...	...	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Container-pan abolished	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Drains in Bakehouse abolished	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Privy abolished	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	198	80	33	19	4	10	8	8	14	16	7	14	10	16	1	2	4	1	2	1	1

SHOP HOURS ACT.

NATURE OF SHOPS INSPECTED.	Number of Inspections.	Employing Young Persons.	Employing Females.	Seats Provided.
Drapers	275	238	265	265
Boot Dealers	126	109	95	95
Grocers	284	249	12	12
Butchers	184	141	...	...
Hairdressers and Tobacconists	175	136	94	94
Newsagents and Stationers	106	76	72	72
Confectioners	116	61	104	104
Public Houses	148	31	134	134
Chemists	41	32	2	2
Fruiters	132	85	51	51
Ironmongers	43	38	4	4
Jewellers	9	6	1	1
Outfitters	54	42	3	3
Furniture Dealers	24	17	3	3
Fancy Dealers	37	27	31	31
Leather Dealers	2	2	...	...
China Dealers	4	3	2	2
Restaurants	55	28	55	55
Seedsmen	4	3	...	...
Cycle Dealers... ..	2	2	...	...
General Dealers	2	...	...	...
Total	1,823	1,326	928	928

PRESERVATIVES IN FOOD.—Owing to certain legal and technical difficulties there has hitherto been considerable variety amongst Sanitary Authorities in the method of dealing with foods to which chemical preservatives have been added.

In consequence of the difficulties surrounding the question a Departmental Committee of the Local Government Board was appointed in July, 1899, to inquire whether the use of preservatives and colouring matters in food in certain quantities is injurious to health, and if so, in what proportion their use becomes injurious. The Committee has quite recently issued its Report, which will prove of great value as a guide to future action under the Sale of Food and Drugs Acts. That portion of the Report which deals with milk is of particular value, as it contains a recommendation to prohibit entirely the use of preservatives or colouring matter in milk. The Committee being satisfied that it is quite possible to carry on the milk trade without these added substances. The Report also recommends the prohibition of the use of Formaldehyde in articles of food, and that Salicytic Acid should not be used in larger proportion than one grain in a pint or pound of food, that in the case of cream, butter, and margarine only boric acid or borate of soda should be permitted, and these only in quantities not exceeding quarter per cent. in cream and half per cent. in butter or margarine. In all cases when these substances are used their nature and quantity is to be distinctly notified. The Report also contains the recommendation that a Court of Reference should be established, to exercise supervision over the use of preservatives and colouring matters in foods, and to prepare schedules of such as may be considered inimical to the public health.

SALE OF MILK REGULATIONS, 1901.—These Regulations for the first time fix a standard of purity in the case of milk, and an important guide to Local Authorities in their proceedings under the Sale of Foods and Drugs Acts.

These Regulations were made by the Board of Agriculture under the powers conferred by the Act of 1899, and came into force on the 1st September, 1901. They are as follows:—

- (1) Where a sample of milk (not being sold as skimmed or separated or condensed milk) contains less than 3 per cent. of milk-fat, it shall be presumed, for the purposes of the Sale of Food and Drugs Acts, 1875 to 1899, until the contrary is proved, that the milk is not genuine, by reason of the abstraction therefrom of milk-fat or the addition thereto of water.
- (2) Where a sample of milk (not being sold as skimmed or separated or condensed milk) contains less than 8·5 per cent. of milk-solids other than milk-fat, it shall be presumed, for the purposes of the Sale of Food and Drugs Act, 1875 to 1899, until the contrary is proved, that the milk is not genuine, by reason of the abstraction therefrom of milk-solids other than milk-fat, or the addition thereto of water.
- (3) Where a sample of skimmed or separated milk (not being condensed milk) contains less than 9 per cent. of milk-solids, it shall be presumed, for the purposes of the Sale of Food and Drugs Acts, 1875 to 1899, until the contrary is proved, that the milk is not genuine, by reason of the abstraction therefrom of milk-solids other than milk-fat, or the addition thereto of water.

The subjoined Table gives the average percentage composition of genuine cows' milk, and is taken from the results of a very large number of analyses.

From this it will be seen that the limits fixed by the Regulations are by no means high, and it is pointed out in the Memorandum of the Board of Agriculture, that the limits below which a presumption is raised that the milk is not genuine were necessarily fixed at figures lower than those which are usually afforded by genuine milk, in which the proportion of milk-fat and non-fatty solids very frequently exceeds the percentage specified.

Attention is also called to the fact that there may occasionally be cases in which a sample of genuine milk may fall below these limits, and that in such cases it is advised that the Local Authority might give the vendor the opportunity of making an explanation, and that if the explanation is one they are able to accept, they might, in the exercise of their discretion, refrain from the institution of proceedings. In such cases it is advised also that further samples of the milk should be taken in order that a satisfactory conclusion as to the character of the milk supplied may be arrived at.

Average composition by weight of Cows' Milk :—

Constituents.				Per Cent.
Fat	...	...	...	3·76
Casein, Albumin, &c.	...	...	...	3·50
Sugar	...	...	...	4·75
Ash	...	...	..	0·72
Water	...	...	...	87·27

MEAT INSPECTION AND FOOD SUPPLY.—During the year the work carried out under this heading has been exceedingly heavy and in excess of that of any preceding year.

The chief part of this work in the Public Slaughter Houses falls upon Mr. C. Moir, M.R.C.V.S., who was appointed Meat Inspector in 1896, and who has continued since that time to act in that capacity.

In the year 1900, by an arrangement between the Health Committee and the Property and Markets Committee, Mr. N. Rees, the Superintendent of the Roath Abattoirs, and three of his Assistants were appointed to assist in the Inspection of Meat at the Public Slaughter Houses. At the same time a special Inspector, Mr. Macgregor, who was formerly a Butcher, was appointed for the purpose of inspecting food in shops. Further, the Cardiff Port Sanitary Authority appointed the Chief Port Inspector, Mr. D. Jenkins, Inspector under the Contagious Disease (Animals) Acts, to carry out the "Orders" of the Board of Agriculture made under that Act.

At the present time the inspection of meat is carried out in a very complete manner.

It is the duty of the Chief Inspector, Mr. Moir, who is a Veterinary Surgeon, to inspect all animals slaughtered within the Borough, his attention is also called to any carcase suspected to be diseased or unsound; having formed his opinion as to the nature of the disease or defect he calls in the Medical Officer of Health, without whose consent no meat is condemned as unfit for food.

The following Table gives the amount of meat in pounds, found by the Medical Officer of Health to be unfit for food, and destroyed either with the consent or by an order of a Magistrate, in each year during the period 1891-1901 :—

Year.				Meat.
1891	...	...	...	2,065 lbs.
1892	...	...	...	1,326 "
1893	...	...	...	6,214 "
1894	...	...	...	3,209 "
1895	...	...	...	4,523 "
1896	...	...	...	3,896 "
1897	...	...	...	10,824 "
1898	...	...	...	9,929 "
1899	...	...	...	14,205 "
1900	...	...	...	21,217 "
1901	...	...	...	33,696 "

During the year 1901 the number of animals slaughtered in the Public Slaughter-houses in the Borough was as follows :—

			Roath Abattoir.	Canton Abattoir.
Beasts...	...	...	6,505	761
Sheep...	...	...	38,085	5,909
Calves	...	...	3,664	311
Pigs ...	...	...	21,131	3,597
			<u>69,385</u>	<u>10,578</u>

UNSOOUND MEAT SEIZED OR SURRENDERED DURING THE YEAR 1901.

Place of Seizure.				Number of Animals.	Number Condemned by Magistrate.	Number Destroyed by arrangement with Owner.	Total Weight in lbs.
Roath Slaughter-house	...	...	...	61	2	59	25,675
Canton do.	...	...	...	5	1	4	1,984
Ice House	...	...	...	19	0	19	2,548
Central Market	...	...	...	2	1	1	126
Butchers' Shops	...	...	...	4	2	2	275
Total	...	...	...	91	6	85	30,608

OTHER ARTICLES OF FOOD SEIZED OR SURRENDERED
DURING THE YEAR 1901.

Place of Seizure.	Description of Articles Seized.	Condemned by Magistrate.	Destroyed by arrangement with owner.	Total Weight in lbs.
Stores ...	6 Boxes of Tinned Food ...	...	1	972
" ...	119 Tins of Preserved Food ...	1	..	357
" ...	10 Pieces of Bacon ...	1	...	130
Shops ...	10 Pieces of Bacon ...	1	...	300
" ...	2 Pieces of Bacon ...	1	...	14
" ...	2 Small Boxes of Bacon ...	...	1	15
" ...	2 Bags of Pigs' Feet ...	...	1	160
" ...	4 Pieces of Mutton ...	1	...	9
" ...	1 Piece of Mutton ...	1	...	6
" ...	6 Pieces of Beef ...	1	...	10
Ice-house ...	2 Boxes of Fish ...	1	...	400
" ...	1 Piece of Beef ...	...	1	65
Great Western Railway Station...	18 Boxes of Fish ...	...	1	450
" "	2 Boxes of Fish ...	...	1	200
Total ...	...	8	6	3,088

SUMMARY OF WORK PERFORMED BY THE OFFICERS OF THE MEDICAL OFFICER
OF HEALTH.

The following tables show the nature and extent of the administrative work of the department. The work is carried out by Mr. D. Vaughan, Chief Inspector of Nuisances, and his assistants, acting under the supervision of the Medical Officer of Health, and I have pleasure in reporting that the Inspectors have performed their difficult duties in a very satisfactory manner.

For the purposes of inspection, the Borough is divided into six districts as follows:—

			Name of District Inspector
District No. 1 comprising	Canton Ward ...	}	T. W. Warren, Cert. San. Inst.
	Riverside Ward ...		
" No. 2 "	Sploot Ward ...	}	W. Fisher, Cert. San. Inst.
	part of Adamsdown Ward ...		
" No. 3 "	Roath Ward ...	}	F. Glover, Cert. San. Inst.
	part of Adamsdown Ward ...		
" No. 4 "	Central Ward ...	}	S. Evans, Cert. San. Inst.
	part of Cathays Ward ...		
" No. 5 "	South Ward ...	}	J. W. Holden, Cert. San. Inst.
	Grangetown Ward ...		
" No. 6 "	Park Ward ...	}	S. R. Henderson, Cert. San. Inst.
	part of Cathays Ward ...		

HOUSE INSPECTION FOR THE YEAR 1901.

CENTRAL WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Seulery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Edward Street ...	42	4	1	...	2	...	42	...	42	41	5	8
Guildford Crescent...	8	1	...	...	1	3	18	...	7	1	1	...
Guildford Street ...	8	1	...	...	1	...	12	...	7	4	...	1
Edward Place ...	13	1	...	...	...	...	13	...	11	11	3	4
Station Terrace ...	18	1	...	...	1	...	31	...	13	12	...	3
North Edward Street	7	3	...	...	7	...	7	...	6	5	...	1
Mary Ann Street ...	51	3	1	...	2	...	45	...	44	36	4	12
Havelock Street ...	46	6	1	4	2	8	47	...	44	44	3	14
Scott Street ...	57	3	3	5	...	...	57	...	57	56	3	15
Raven Street ...	16	...	...	...	...	...	16	...	16	16	...	3
Eisteddfod Street ...	40	8	1	...	5	...	40	...	40	37	7	11
Wood Street ...	68	4	2	...	1	...	69	...	63	50	2	23

CATHAYS WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Seulery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Fanny Street ...	13	...	...	...	...	...	17	...	12	12	4	5
Catherine Street ...	26	7	1	...	5	...	26	...	26	26	16	15
Letty Street ...	51	3	1	2	2	...	51	...	51	50	12	15
Flora Street ...	77	13	1	1	12	...	77	...	77	77	9	17
Minnie Street ...	85	7	1	7	3	...	89	...	89	81	8	17
Dalton Street]	30	1	3	4	...	...	30	...	30	...	2	3
Gladys Street ...	10	...	...	...	...	...	10	...	10	10	1	2
May Street ...	98	4	1	3	...	...	98	...	96	92	13	24
Allensbank Road ...	19	1	...	...	...	...	19	...	19	19	1	12
Crwys Road ...	64	6	1	1	4	...	88	2	51	52	3	8
Whitchurch Road ...	19	3	1	3	...	...	19	...	19	19	2	2
Robert Street ...	60	4	1	3	...	...	60	...	32	49	2	27

GRANGETOWN WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Seulery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Earl Street ...	22	...	...	2	...	...	22	...	22	22	7	17
Amherst Street ...	45	...	1	6	...	...	45	...	45	45	13	18
Ludlow Street ...	45	...	...	5	3	...	45	...	45	45	8	13
Kent Street ...	67	...	...	11	...	...	67	...	67	67	11	18
Bromfield Street ...	23	...	...	6	...	...	23	...	23	23	4	8
Bradford Street ...	26	...	1	4	...	...	26	...	26	26	3	11
Newport Street ...	25	...	...	3	...	...	25	...	25	25	4	9
Penhevad Street ...	87	...	...	3	...	...	88	...	87	46	20	24

SOUTH WARD

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Hodge's Row ...	12	...	...	1	...	...	12	...	12	10	8	...
Hodge's Court ...	5	...	...	3	...	...	5	5	...	...	2	...
Henry Street ...	17	...	...	3	2	...	17	...	16	16	2	...
Loudoun Place ...	3	...	...	1	...	...	3	1	2	2	...	...
Alice Street ...	30	...	...	4	...	...	30	...	30	30	4	7
Hannah Street ...	11	...	...	...	1	...	11	...	11	10	...	2
Patrick Street ...	34	...	...	...	1	...	34	...	15	12	...	3
George Street ...	47	...	...	1	1	...	48	...	27	36	2	7
Louisa Street ...	50	...	...	11	2	...	50	...	50	45	8	11
South William Street ...	44	...	...	6	...	...	44	...	44	35	6	12

ROATH WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Cecil Street ...	73	1	1	2	...	...	74	...	73	70	7	7
Bertram Street ...	63	3	...	2	1	...	63	...	63	60	8	14
Harold Street ...	50	1	...	1	...	...	50	...	50	39	8	13
Theodora Street ...	52	3	1	5	...	...	52	...	52	52	6	3
Tyler Street ...	16	2	4	4	...	...	16	...	16	16	...	...
Bradley Street ...	41	...	...	1	...	...	41	...	41	41	1	2
Arthur Street ...	37	4	2	5	...	...	37	...	37	37	4	10
Blanche Street ...	47	6	...	5	...	...	47	...	46	47	7	7
Beresford Road ...	46	1	...	3	...	...	47	...	46	42	9	9
Spring Gardens Terrace ...	68	...	1	1	...	...	65	...	65	65	9	11
Spring Gardens Place ...	31	1	1	1	...	...	31	...	31	31	2	2

CANTON WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Eldon Street ...	40	5	2	6	...	...	40	...	40	40	12	17
Wells Street ...	37	7	...	4	...	...	37	...	37	36	13	...
Gray Street ...	59	1	...	1	...	...	59	...	59	38	3	7
Rolls Street ...	44	6	2	5	3	...	44	...	44	44	21	23
Chancery Street ...	44	5	...	3	...	...	44	...	44	44	28	8
Lyndhurst Street ...	43	3	1	...	1	...	43	...	22	22	8	11
Littleton Street ...	24	4	...	1	...	...	24	...	24	24	9	10
Coke Street ...	10	3	...	3	...	...	10	...	3	3	...	3
Springfield Place ...	52	4	2	10	...	...	52	...	52	52	22	28

SPLOTT WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Railway Crescent ...	5	...	...	...	...	...	5	...	5	...	...	...
Railway Street ...	267	5	5	4	2	...	263	...	224	231	4	103
Hope Terrace ...	4	...	...	...	...	...	4	...	4	3	...	...
Marion Street ...	110	9	1	4	...	...	107	...	107	78	...	11

ADAMSDOWN WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Roland Street ...	27	...	...	2	1	...	27	...	27	21	...	12
Pendoylan Street ...	29	...	...	4	...	...	30	...	30	27	...	12
North William Street ...	34	5	...	5	...	...	34	...	33	34	1	20
Pendoylan Place ...	2	...	...	1	...	...	2	...	2	2	...	1
Ellen Street ...	31	...	...	4	...	...	31	...	11	31	18	26
Thomas' Court ...	2	...	...	...	...	...	2	...	2	2	...	...
Tyndall Street ...	48	...	1	3	...	...	59	...	56	45	...	29
Noah Street ...	7	...	...	1	...	...	7	...	7	3	...	6
South Terrace ...	6	...	...	1	...	...	5	...	6	6	...	4
Garth Court ...	21	...	3	...	...	...	21	...	21	15	...	5
Dew's Court, No. 1 and 2	15	...	1	...	...	...	13	...	13	11	...	2
Duffryn Court ...	9	2	...	...	...	...	9	...	9	8	...	4
Pellet Street ...	22	...	...	1	...	...	22	...	22	22	...	8
Taff Street ...	19	...	1	1	...	...	17	...	17	17	...	10
Morgan Street ...	23	...	...	1	...	...	23	...	23	23	...	16
Ivor Street ...	9	...	...	...	...	...	9	...	9	9	...	4
Godfrey Street ...	14	1	1	2	...	...	14	...	14	14	...	11
Orbit Street ...	35	14	...	7	11	...	37	...	35	34	3	9

RIVERSIDE WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Trevethick Street ...	19	...	...	...	...	...	19	...	19	13	8	8
Rennie Street ...	29	1	...	2	...	...	29	...	29	29	1	2
Wells Street ...	53	6	4	9	...	...	53	...	53	49	7	11
Craddock Street ...	150	6	4	8	...	...	152	...	148	130	27	35
Eldon Street ...	120	9	2	7	...	...	114	...	120	92	10	23
Halket Street ...	52	7	1	9	3	...	52	...	50	52	21	31
East Street ...	16	5	1	4	5	...	16	...	16	16	8	8

PARK WARD.

NAME OF STREET.		Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Soullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Causes.
Keppoch Street ...	...	137	1	...	1	...	...	142	...	135	78	25	31
Milton Street ...	...	50	...	...	9	...	...	51	...	50	50	1	4
Russell Street ...	...	31	...	...	5	...	...	31	...	31	31	13	29
Clive Place ...	...	9	...	...	...	...	...	7	...	9	9	...	4

INSPECTION OF COMMON LODGING HOUSES.—These houses are regulated by the provisions of the Public Health Act, 1875. Section 77 requires all Common Lodging Houses to be registered, and Section 80 empowers the Sanitary Authority to make Bye-Laws.

- (1) For fixing and from time to time varying the number of lodgers who may be received into a Common Lodging House, and for the separation of the sexes therein.
- (2) For promoting cleanliness and ventilation in such houses.
- (3) For the giving of notices and the taking precautions in the case of any infectious diseases; and
- (4) Generally for the well ordering of such houses.

In the year 1891, your Authority adopted Bye-laws which correspond closely with the "Model Bye-laws" of the Local Government Board.

COMMON LODGING HOUSES.

Total number on register ...	...	...	...	...	36
Registered rooms ..	...	...	...	...	132
Number of persons certified to accommodate ...	...	...	...	...	449
Day inspections ...	...	...	...	...	956
Night inspections ...	...	...	...	...	180
W.Cs. cleansed and repaired ...	...	...	...	...	46
„ supplied with water ...	...	...	...	...	3
Drains trapped and repaired ...	...	...	...	...	13
Special ventilation provided to rooms ...	...	...	...	...	16
Lime-washed ...	...	...	...	...	79
Yards paved ...	...	...	...	...	10
Accumulations removed ...	...	...	...	...	29
Registered ...	...	...	...	...	8
Repaired ...	...	...	...	...	27

SEAMEN'S LODGING HOUSES.

Total number of applications ...	...	...	...	461
„ „ Refused ...	...	...	...	66
„ „ Relinquished ...	...	...	...	273
Total number of persons licensed ...	...	...	...	121
„ „ houses, the occupiers of which have been licensed ...	...	...	...	122
Maximum number of lodgers authorised to be received in the above ...	...	...	...	1,239

SEAMEN'S LODGING HOUSES—Continued.

Number of day inspections...	...	...	...	...	3,608
„ night „ ...	...	...	...	...	259
„ houses in which sanitary improvements have been effected	...	...	...	...	459

NATURE OF SANITARY DEFECTS :—

Defective water-closets	...	...	...	...	64
Insufficient W.C. accommodation	...	...	...	...	6
Defective drains	...	...	...	...	42
Defective paving in yards	...	...	...	...	18
Defective bedroom ventilation	...	...	...	...	23
Houses with walls and roofs out of repair	...	...	...	...	58
Infectious disease discovered	...	...	...	...	20
Lime-washed	...	...	...	...	248
Legal proceedings taken	...	...	...	...	7

SALE OF FOOD AND DRUGS ACT.

The following articles were analysed during the year by Mr. Thomas Hughes, F.I.C.,
F.C.S., Borough Analyst :—

Samples obtained.	Number of Samples.	Number of Genuine Samples.	Number of Samples Adulterated.	Fines.
Beer	26	26	—	
Jam	10	10	—	
Milk	321	305	16	£5 and costs. £2 and costs. £1 and costs. £5 and costs. £2 and costs. £1 and costs. £3 and costs. £2 and costs. 10s. and costs. £3 and costs. 10s. and costs. £2 and costs. 10s. and costs. £4 and costs. 10s. and costs. £2 and costs.
Whiskey (Irish) ..	5	5	—	
Rum	5	4	1	1s. and costs.
Gin	5	5	—	
Whiskey (Scotch) ...	5	5	—	
Flour	18	18	—	
Bread	12	12	—	
Coffee	15	15	—	
Demerara Sugar ...	12	12	—	
Rice	3	3	—	
Butter	36	33	3	No proceedings taken.
Sago	3	3	—	
Arrowroot	3	3	—	
Brandy	5	5	—	
Port	2	2	—	
Sherry	2	2	—	
Baking Powder ...	2	2	—	
Corn Flour	17	17	—	
Carbonate of Soda...	2	2	—	
Margarine	21	21	—	
Lard	12	12	—	
Tea	1	1	—	
Ginger... ..	9	9	—	
Separated Milk ...	3	3	—	
Vinegar	1	1	—	
Golden Syrup	4	4	—	
Sweets	6	6	—	
Mustard	1	1	—	
Cheese	5	5	—	
Preserved Peas ...	1	1	—	
Condensed Milk ...	1	1	—	
Sweet Spirit of Nitre	4	4	—	
Marmalade	4	4	—	
Pepper... ..	3	3	—	
German Sausage ...	2	2	—	
Ice Cream	6	6	—	
Total	593	573	20	

MAGISTERIAL PROCEEDINGS.

			Number of	Fines.		
			Cases.	£	s.	d.
Proceedings under	Sale of Food and Drugs Act	...	17	...	34	1 0
"	" Seamen's Bye-laws	...	8	...	51	5 0
"	" Common Lodging Houses	...	—	...	—	—
"	" Cowsheds and Milkshops Order	...	—	...	—	—
"	" Housing of the Working Classes Act	...	33	...	—	—
"	" Factory Act	...	1	...	0	5 0
"	" Shop Hours Act	...	—	...	—	—
"	" Public Health Act	...	19	...	48	0 0
"	" Town Police Clauses Act (Sec. 31)	...	13	...	0	7 6
			91	£133 18 6		

I have the honour to be, Gentlemen,

Your obedient Servant,

EDWARD WALFORD, M.D.,

MEDICAL OFFICER OF HEALTH.

**Report of Mr. D. VAUGHAN, Chief Inspector of Nuisances, and Inspector
of Canal Boats, for the year 1901.**

NUISANCES :—

Nuisances inspected	...	...	...	...	...	4,057
Notices issued	...	...	...	...	...	3,286
Nuisances abated without legal proceedings	...	...	...	...	...	4,057
" " with " "	...	...	...	...	...	—
Animals kept so as to be a nuisance	...	...	...	...	...	53
Injurious and foul accumulations	...	...	...	...	...	372
Nuisances from smoke	...	...	...	...	...	6
Stagnant water in cellar	...	...	...	...	...	72
Houses unfit for human habitation	...	...	...	...	...	28
Defective drainage	...	...	...	...	...	897
Drains unstopped and cleansed	...	...	...	...	...	380
" trapped and repaired	..	...	...	...	...	60
" tested	...	...	...	...	...	812
" found defective	...	...	...	...	...	457
Foul and offensive W.Cs. cleansed	...	...	...	...	...	66
Defective apparatus to water-closets repaired	...	...	...	...	...	72
Water laid on to water-closets	...	...	...	...	...	8
" " urinals	...	...	...	...	...	17
" " dwelling houses	...	...	...	...	...	69
Insufficient ventilation	...	...	...	...	...	8
Overcrowding notices	...	...	...	...	...	5
Dilapidated houses repaired...	...	...	...	...	...	966
Dirty houses and workshops cleansed and lime-washed	...	...	...	...	...	165
Additional W.C. accommodation provided	...	...	...	...	...	15
Percolation of water	..	...	...	...	...	1
Offensive water-closets abolished	...	...	...	...	...	4
Persons sleeping in basement of house	...	...	...	...	...	2
Defective apparatus to water supply	...	...	...	...	...	1

DISINFECTION :—

Houses disinfected	...	..	...	...	...	1,672
Articles of bedding and clothing disinfected	29,701
" " " destroyed	299

OFFENSIVE TRADES :—

Premises visited...	1,015
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SLAUGHTER HOUSES AND MARKETS :—

Visits paid to slaughter houses	163
" " markets	260
Articles destroyed unfit for food—Beef, 23,429 lbs.; Fruit, 40 lbs.; Pork, 4,374 lbs.; Veal, 50 lbs.; Mutton, 663 lbs.; Fish, 850 lbs.; Bacon, 464 lbs.; Ham, 130 lbs.; Poultry, 120 lbs.; Tinned Provisions, 1068 lbs.; Condensed Milk, 228 lbs.						
Butchers' and Provision Shops inspected	...	...	...	...	...	4,810

COWSHEDS, MILKSHOPS AND DAIRIES :—

Number of Cowkeepers on register	...	...	...	...	...	24
" Milk sellers	...	...	...	...	...	571

Total ... 595

Number of Cowkeepers registered during the year ..	...	...	...	...	—
„ Milksellers registered during the year ...	...	...	...	...	105
					<u>105</u>
Number of visits paid to cowsheds	...	...	...	...	218
„ „ „ milkshops	...	...	...	...	1,134
Notices served ...	...	...	...	...	72
					<u>1,424</u>

COWSHEDS, MILKSHOPS, AND DAIRIES.

PARTICULARS OF INSPECTION.	COWSHEDS.	MILKSHOPS.
Total number of inspections	218	1,134
Found in good condition	15	1,071
Water closets, sinks, or drains defective	—	32
Receptacles for manure erected	—	1
Yards badly paved and accumulations of rubbish	2	27
Dairies or milkshops used for purposes incompatible with proper preservation of milk	—	3
Infectious disease amongst persons employed	—	8
Cowsheds with defective lighting, cleansing, ventilating of air space, and lime washing	7	7
Cowsheds overcrowded	—	—

CANAL BOATS.

Number of Boats on Register	...	...	...	36
„ Inspections	...	...	...	109
„ Boats found in good condition	...	...	...	89
„ „ with wrong register number	...	...	...	1
„ „ found with defective ventilators	...	...	...	12
Certificates cancelled	...	...	...	2
Water vessels defective	...	...	...	6
Notices served and complied with	...	...	...	12
Cabins leaking	...	...	...	1
Defective chimney	...	...	...	1
Verbal notices served and complied with	...	...	...	16

APPENDIX.

METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1901.

MONTH.	Attached Thermometer.	Barometer. Inches.	TEMPERATURE IN SHADE.							HYGROMETER.			RAINFALL.				DEATH-RATE per 1,000.	
			Maximum.	Minimum.	Mean of Maximum.	Mean of Minimum.	Mean of Month.	Earth.		Dry Bulb Mean.	Wet Bulb Mean.	Relative Humidity.	Amount in Inches.	Greatest Fall in 24 hours.	Date of Greatest Fall.	Days on which 0.01 or more rain fell.	All Causes.	Seven Chief Zymotic Diseases.
								1 foot mean.	4 feet mean.									
January ...	55	30.001	52.0	22.0	44.9	31.0	37.9	42.5	46.1	37.5	36.2	87	2.48	.59	26th	17	18.1	0.8
February ...	54	30.431	52.0	22.0	46.2	29.5	37.8	39.8	42.2	36.0	34.7	84	1.01	.25	26th	10	17.9	1.9
March ...	56	29.747	64.0	16.0	48.9	32.4	40.6	41.3	41.7	40.0	38.0	84	2.10	.31	5th	12	22.0	1.9
April ...	59	29.800	71.0	23.5	57.3	36.6	46.9	47.5	46.1	45.7	45.4	97	4.54	.91	3rd	14	16.0	1.4
May ...	60	30.053	75.5	34.0	63.8	43.8	53.5	52.6	50.1	55.5	50.0	67	.91	.42	30th	5	14.5	1.4
June ...	66	30.048	78.0	41.2	65.5	49.1	57.3	54.0	51.4	60.0	55.0	71	3.00	1.22	20th	9	12.3	0.9
July ...	68	30.010	89.0	46.0	72.4	56.0	64.2	63.0	57.0	66.1	61.5	75	2.58	1.00	23rd	8	12.2	1.9
August ...	65	30.366	76.0	45.0	67.2	52.9	60.0	60.7	59.1	58.8	58.4	98	4.00	1.30	13th	14	14.2	2.9
September ...	62	29.871	70.0	40.0	65.2	50.0	57.7	58.7	55.7	57.7	55.5	86	4.36	1.52	13th	17	13.6	2.4
October ...	60	29.895	67.0	25.0	56.9	42.5	49.7	52.0	52.4	50.6	48.8	87	2.64	.37	1st	21	12.0	1.7
November ...	60	30.190	63.0	14.2	50.9	32.2	41.5	44.6	49.8	39.7	37.7	84	1.50	.51	11th	8	16.4	1.7
December ...	56	29.818	58.8	15.0	47.2	31.2	39.2	40.9	43.8	40.5	38.6	84	7.15	.99	7th & 28th	21	18.9	0.9

68.6.4 46.7
58.5 46.5
46.7 46.3
46.3

Mean Temperature of Each Month in the Year, as compared with that of the previous Five Years.

MONTH.	1891	1892	1893	1894	1895	Mean of 5 years	1896	1897	1898	1899	1900	1901
January	... 35°8	36°2	36°8	39°4	35°5	36°3	41°6	35°9	44°0	42°2	36°5	37°9
February	... 41°6	38°6	42°2	43°0	29°3	38°9	40°8	43°5	41°3	41°3	39°8	37°8
March	... 40°8	35°9	47°1	44°4	41°6	41°9	45°9	44°6	41°1	42°1	38°3	40°6
April	... 45°5	43°2	53°0	47°0	47°9	47°3	48°0	46°3	46°6	47°2	46°6	46°9
May	... 50°9	50°7	57°3	49°7	54°4	52°6	52°9	49°1	49°9	52°0	50°4	53°5
June	... 60°2	54°5	62°4	57°1	58°5	58°5	61°4	59°5	55°9	59°8	55°3	57°3
July	... 60°2	64°1	63°6	60°3	60°0	61°6	61°4	62°7	60°6	63°8	63°9	64°2
August	... 56°4	61°3	64°8	57°5	59°0	59°8	58°6	60°9	61°5	68°3	59°8	60°0
September	... 57°0	56°0	57°1	53°2	59°7	56°6	56°8	54°4	58°8	57°8	55°5	57°7
October	... 48°8	42°9	51°0	50°3	46°7	47°9	46°2	51°2	52°7	48°9	49°1	49°7
November	... 41°7	43°8	43°2	47°2	47°2	44°6	39°9	46°1	45°7	47°0	44°5	41°5
December	... 40°4	35°8	42°1	41°8	40°0	40°0	40°0	42°5	46°7	37°3	43°5	40°9

The following Table illustrates the Daily Direction of Wind throughout the Year 1901.

Direction of Wind.			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year 1901
N.	...	...	1	4	1	1	...	1	4	...	...	3	4	2	21
N.E.	...	...	14	8	12	8	19	9	15	9	12	12	14	9	141
N.W.	...	...	4	10	6	3	2	7	5	10	3	3	4	2	59
S.	...	...	...	1	..	...	1	...	...	1	1	2	...	1	7
S.E.	...	...	4	1	1	7	5	6	3	9	3	2	2	3	46
S.W.	...	...	6	4	7	9	3	5	2	2	8	6	2	5	59
E.	...	...	...	...	4	1	1	...	1	...	2	2	1	1	13
W.	...	...	2	...	...	1	...	2	1	...	1	1	3	8	19

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE TWENTY-SIX YEARS, 1876—1901.

YEAR.	JANUARY.				FEBRUARY.				MARCH.			
	Rainfall in Month. Inches.	Days on which 0·01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0·01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0·01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.
1876	1·91	12	0·68	2nd	5·23	22	0·90	14th	3·92	22	0·54	9th
1877	5·77	27	0·72	3rd	2·79	20	0·42	11th	2·66	21	0·55	23rd
1878	1·73	17	0·36	27th	3·07	16	0·87	27th	1·25	8	0·40	28th
1879	5·95	10	1·30	1st	5·95	23	0·86	20th	1·14	14	0·32	23rd
1880	0·87	11	0·42	13th	3·88	22	1·06	18th	1·90	12	0·75	2nd
1881	0·92	12	0·23	26th	4·81	15	1·12	9th	3·88	16	0·68	3rd
1882	3·19	13	0·82	2nd	2·56	15	0·60	28th	2·26	19	0·32	1st
1883	5·75	25	1·11	24th	3·73	20	0·65	10th	0·60	10	0·12	19th
1884	6·03	21	0·99	31st	4·40	22	1·35	17th	3·39	16	1·27	3rd
1885	3·71	20	0·58	9th	3·65	22	0·67	26th	1·87	16	0·53	29th
1886	5·03	23	0·91	30th	1·32	11	0·62	28th	3·97	13	0·68	20th
1887	2·76	15	0·73	7th	1·45	6	0·73	3rd	3·21	10	1·16	15th
1888	1·70	12	0·49	1st	1·07	9	1·09	2nd	4·62	15	0·76	24th
1889	1·58	10	0·58	9th	2·00	16	0·64	10th	3·89	16	1·17	8th
1890	5·21	24	0·61	26th	0·55	7	0·22	19th	1·52	14	0·28	24th
1891	3·58	13	1·26	23rd	0·05	2	0·03	2nd	1·76	16	0·31	15th
1892	2·10	15	0·70	16th	2·38	19	0·58	20th	1·18	6	0·48	15th
1893	2·38	19	0·94	12th	6·04	22	0·95	25th	0·31	6	0·14	2nd
1894	3·20	23	0·44	19th	3·68	20	0·78	17th	3·37	13	0·82	1st
1895	3·88	20	0·71	19th	0·17	4	0·08	24th	3·92	21	0·85	27th
1896	0·64	6	0·40	24th	1·39	9	0·80	13th	4·47	24	0·54	7th
1897	3·78	17	0·50	31st	5·73	21	0·70	4th	6·29	19	0·90	21st
1898	1·96	10	0·48	10th	1·71	17	0·22	18th	1·12	9	0·53	6th
1899	5·50	20	1·03	20th	3·89	13	0·79	4th	1·39	6	0·88	25th
1900	5·81	23	1·26	6th	6·40	20	0·99	18th	1·06	6	0·33	21st
1901	2·48	17	0·59	26th	1·01	10	0·25	26th	2·10	12	0·31	6th

TABLE SHOWING RAINFALL AT CARDEFF IN EACH MONTH, DURING THE TWENTY-SIX YEARS, 1876--1901.

YEAR.	APRIL.				MAY.				JUNE.			
	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.
1876	1.91	17	0.38	28th	0.23	4	0.12	24th	1.91	9	0.52	15th
1877	2.90	20	0.52	20th	2.47	14	0.99	16th	1.48	12	0.41	1st
1878	4.10	21	0.75	9th	4.32	24	0.71	18th	3.68	15	1.55	16th
1879	2.64	17	0.73	19th	2.85	15	0.88	29th	6.48	23	1.64	30th
1880	1.98	13	0.40	5th	1.45	11	0.46	26th	2.38	19	0.53	17th
1881	1.44	7	0.60	13th	2.62	10	1.73	17th	3.59	18	0.63	16th
1882	5.68	20	0.60	12th	2.72	13	0.59	22nd	4.28	20	0.82	5th
1883	0.67	7	0.28	26th	1.90	12	0.70	11th	1.81	17	1.16	27th
1884	1.56	11	0.43	3rd	2.37	14	0.50	2nd	1.92	9	1.11	28th
1885	2.52	16	0.67	1st	3.86	27	0.71	19th	2.61	13	1.04	23rd
1886	2.98	15	0.73	7th	6.38	19	1.52	31st	0.70	7	0.28	1st
1887	1.63	10	0.45	26th	1.94	14	0.63	19th	0.60	4	0.51	2nd
1888	1.48	13	0.30	17th	1.69	8	0.40	17th	3.89	17	0.74	1 th
1889	3.54	18	0.71	30th	2.51	16	0.88	31st	0.58	6	0.41	1st
1890	1.80	14	0.34	6th	1.99	13	0.66	9th	2.46	17	0.40	10th
1891	2.02	11	0.40	2nd	3.41	17	0.75	21st	2.47	12	1.30	24th
1892	1.27	9	0.43	20th	1.35	11	0.66	27th	1.93	10	0.61	28th
1893	0.29	5	0.16	1st	2.80	12	0.72	19th	0.67	9	0.23	22nd
1894	2.05	15	0.41	23rd	2.18	15	0.50	15th	2.43	16	0.64	3rd
1895	2.08	12	0.55	24th	0.50	3	0.41	31st	1.15	9	0.32	30th
1896	2.83	14	0.80	15th	0.22	3	0.14	13th	2.48	11	1.00	7th
1897	8.18	20	0.90	13th	2.29	8	0.50	29th	5.02	11	0.90	8th
1898	1.40	10	0.28	11th	4.80	20	0.80	11th	5.06	14	0.90	4th
1899	4.34	18	0.92	20th	2.49	12	0.78	19th	1.17	5	0.45	30th
1900	1.62	12	0.42	3rd	1.89	13	0.37	21st	1.73	14	0.27	14th
1901	4.54	14	0.91	3rd	0.91	5	0.42	30th	3.00	9	1.22	20th

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE TWENTY-SIX YEARS, 1876—1901.

YEAR.	JULY.					AUGUST.					SEPTEMBER.				
	Rainfall in Month. Inches.	Days on which 0·01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0·01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0·01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0·01 or more rain fell.	Greatest fall in 24 hours.
1876	1·91	10	0·41	6th	6·06	27	2·72	19th	7·08	19	1·28	30th			
1877	4·94	18	1·27	14th	5·70	21	1·42	27th	3·25	8	1·39	27th			
1878	2·01	9	0·78	23rd	10·82	24	3·64	15th	3·21	9	1·28	22nd			
1879	4·00	21	0·81	19th	8·12	22	1·34	27th	4·85	17	0·69	7th			
1880	6·64	23	0·95	17th	0·77	7	0·27	3rd	3·67	15	0·77	17th			
1881	2·62	15	0·77	30th	6·94	20	1·45	22nd	2·09	13	0·48	22nd			
1882	5·77	24	0·84	6th	6·75	16	1·14	22nd	3·94	17	0·79	28th			
1883	3·56	21	0·82	20th	2·09	16	0·73	8th	6·14	19	1·53	23rd			
1884	4·05	20	0·94	23rd	2·21	9	0·84	31st	1·96	15	8·64	21st			
1885	0·72	6	0·31	18th	2·74	12	1·07	6th	6·51	23	1·76	10th			
1886	4·85	17	0·71	29th	1·68	9	0·44	9th	4·08	14	0·75	4th			
1887	1·51	13	0·85	26th	2·88	11	1·02	16th	4·07	17	1·24	1st			
1888	6·83	25	1·16	7th	3·50	17	0·74	29th	1·21	8	0·52	27th			
1889	3·85	12	1·16	9th	3·90	15	0·65	2nd	2·09	9	1·53	23rd			
1890	3·57	19	0·73	17th	3·95	20	0·95	9th	1·57	11	0·50	17th			
1891	2·21	17	0·36	2nd	7·19	22	1·10	26th	2·43	19	0·51	3rd			
1892	3·83	9	1·50	12th	4·64	16	1·62	27th	3·95	14	1·38	29th			
1893	3·88	17	0·80	10th	3·05	14	0·52	20th	2·03	15	0·89	28th			
1894	4·22	20	0·97	24th	4·55	18	1·55	25th	2·22	10	0·80	22nd			
1895	4·71	15	0·94	23rd	4·08	17	1·19	12th	1·17	10	0·40	6th			
1896	1·14	8	0·35	24th	2·89	15	0·84	19th	7·34	23	1·10	17th			
1897	2·51	8	0·80	6th	5·42	16	1·30	30th	6·37	13	1·38	29th			
1898	0·40	2	0·20	1st	3·48	10	0·67	6th	1·94	4	1·38	29th			
1899	0·32	6	0·09	1st	1·74	7	0·56	29th	2·59	13	0·74	26th			
1900	0·68	8	0·27	27th	4·06	14	0·88	9th	1·32	10	0·50	26th			
1901	2·58	8	1·00	23rd	4·00	14	1·30	13th	4·36	17	1·52	13th			

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE TWENTY-SIX YEARS, 1876-1901.

YEAR.	OCTOBER.				NOVEMBER.				DECEMBER.				YEAR.
	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	
1876	3.84	17	0.62	16th	5.27	18	0.75	12th	7.13	23	0.80	17th	46.62
1877	4.89	16	1.15	24th	6.54	25	1.06	24th	3.40	25	0.88	28th	46.79
1878	5.76	18	1.09	23rd	5.76	13	0.84	9th	2.70	10	0.75	28th	45.71
1879	1.51	12	0.35	19th	0.43	8	0.18	26th	2.11	9	0.79	31st	44.79
1880	4.94	15	1.45	25th	3.67	15	0.90	15th	6.70	20	1.09	14th	38.85
1881	3.23	13	0.72	22nd	4.98	23	0.65	26th	4.50	15	1.77	7th	41.62
1882	8.33	23	1.64	23rd	6.26	21	0.90	7th	4.86	25	0.73	31st	56.60
1883	4.23	17	0.61	15th	6.38	24	0.80	21st	1.92	17	0.57	10th	38.78
1884	1.01	17	0.35	8th	2.12	16	0.47	30th	5.87	20	0.68	5th	36.89
1885	5.59	22	1.60	22nd	5.47	16	1.11	27th	1.74	17	0.05	5th	40.99
1886	5.09	21	0.87	15th	5.39	21	1.03	5th	6.64	21	1.33	26th	48.11
1887	2.80	13	1.14	29th	3.48	21	0.89	3rd	3.46	20	0.75	12th	29.79
1888	1.74	11	0.52	28th	7.04	26	1.13	12th	3.61	16	0.88	27th	38.18
1889	3.77	25	0.48	8th	1.87	12	0.75	24th	2.40	14	0.80	21st	31.38
1890	1.92	16	0.41	7th	3.89	20	0.67	6th	0.80	4	0.33	18th	29.23
1891	7.12	22	1.32	18th	3.91	15	0.74	28th	6.19	19	0.78	30th	42.34
1892	2.64	15	0.51	27th	3.25	18	0.66	4th	2.23	12	0.62	1st	22.63
1893	5.98	21	1.29	4th	2.30	13	0.58	1st	4.18	19	0.94	12th	33.91
1894	4.91	14	1.05	24th	4.72	20	0.83	13th	3.66	20	0.51	17th	41.19
1895	3.67	15	0.94	3rd	4.21	23	0.60	5th	3.45	31	0.48	17th	32.64
1896	4.65	19	0.74	5th	0.96	5	0.60	15th	6.41	22	0.72	4th	35.42
1897	3.22	7	0.90	2nd	1.82	7	0.63	27th	6.06	18	1.19	7th	56.80
1898	7.30	18	1.13	17th	7.46	16	1.39	23rd	5.44	17	1.03	6th	42.07
1899	2.34	12	0.60	27th	3.29	11	0.95	9th	3.69	19	0.86	28th	32.75
1900	5.79	21	1.06	29th	4.99	22	0.71	24th	6.55	26	1.06	30th	41.90
1901	2.64	21	0.37	1st	1.50	8	0.51	11th	7.15	21	0.99	7th & 28th	36.27

LOCAL GOVERNMENT BOARD TABLE.

TABLE I.

VITAL STATISTICS OF WHOLE DISTRICT DURING 1901 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.		TOTAL DEATHS REGISTERED IN THE DISTRICT.						TOTAL DEATHS IN PUBLIC INSTITUTIONS IN THE DISTRICT.	Deaths of Non-registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	NET DEATHS AT ALL AGES BELONGING TO THE DISTRICT.	
		Number.	Rate.*	Under 1 Year of Age.		At all Ages.								
				Number.	Rate per 1,000 Births registered.	Number.	Rate*	Number.	Rate*					
1	2	3	4	5	6	7	8	9	10	11	12	13		
1891	130,283	4,737	36.5	725	153	2,873	22.0	390	...	...	2,873	22.0
1892	132,895	4,776	35.8	782	163	2,560	19.2	311	...	...	2,560	19.2
1893	136,168	5,119	37.5	918	179	2,794	20.4	332	...	...	2,794	20.4
1894	139,519	5,100	36.5	722	141	2,415	17.3	263	...	...	2,415	17.3
1895	142,958	5,321	37.1	951	179	2,840	19.9	342	...	...	2,840	19.9
1896	146,479	5,591	38.1	923	165	2,826	19.2	364	31	...	2,795	19.0		
1897	150,087	5,279	35.1	796	151	2,568	17.1	303	34	...	2,534	16.8		
1898	153,783	5,520	35.9	870	158	2,684	17.4	312	57	...	2,627	17.0		
1899	157,414	5,309	33.7	976	184	2,951	18.7	321	93	...	2,858	18.1		
1900	161,452	5,198	35.2	730	141	2,745	17.0	314	78	...	2,667	16.5		
Averages for years 1891-1900 ...	145,103	5,194	35.7	839	161	2,725	18.7	325	...	...	2,696	18.5
1901	165,308	5,206	31.4	775	148	2,671	16.1	352	75	57	2,653	16.0		

* Rates in Columns 4, 8, and 13 calculated per 1,000 of estimated population.

Total population at all ages ... 164,333

Number of inhabited houses ... 27,971 At Census of 1901.

Average number of persons per house ... 5.8

Area of District in acres (exclusive of area covered by water) ... 6,373

LOCAL GOVERNMENT BOARD TABLE.

TABLE II.

VITAL STATISTICS OF SEPARATE LOCALITIES IN 1901 and PREVIOUS YEARS

Names of Localities.	COUNTY BOROUGH OF CARDIFF. (Whole District.)				EAST CARDIFF. Registration (Sub-district.)				CENTRAL CARDIFF. Registration (Sub-district.)				WEST CARDIFF. Registration (Sub-District.)			
	Population est- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population est- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population est- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.	Population est- mated to middle of each year.	Births regis- tered.	Deaths at all Ages.	Deaths under 1 year.
1891	...	130,283	4,737	2,871	725	...	...	...	...	...	...	...	...	...	...	...
1892	...	132,895	4,789	2,559	782	...	...	...	...	...	...	...	...	...	...	...
1893	...	136,168	5,121	2,796	918	...	...	...	...	...	...	...	...	...	...	...
1894	...	139,519	5,103	2,408	722	...	...	...	...	...	...	...	...	...	...	...
1895	...	142,858	5,321	2,826	951	...	...	...	...	...	...	...	...	...	...	...
1896	...	146,479	5,591	2,784	923	...	...	...	...	...	...	...	...	...	...	...
1897	...	150,087	5,279	2,534	796	45,282	1,735	643	240	54,184	1,528	909	250	50,051	2,015	982
1898	...	153,783	5,520	2,627	870	47,124	1,821	714	288	54,217	1,610	924	279	51,921	2,089	989
1899	...	157,414	5,309	2,858	976	49,040	1,750	753	307	54,300	1,617	1,009	308	53,861	1,942	1,096
1900	...	161,452	5,198	2,667	730	51,035	1,658	755	214	54,358	1,510	907	229	55,874	2,030	1,005
Averages of Years 1891 to 1900	145,103	5,196	2,693	839	...	...	...	...	...	...	...	...	...	...	...	...
1901	...	165,308	5,206	2,653	775	53,111	1,667	668	226	54,402	1,572	912	255	57,962	1,967	1,073
																294

LOCAL GOVERNMENT BOARD TABLE.

TABLE III.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1901.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY			No. of CASES REMOVED TO HOSPITAL FROM EACH LOCALITY.		
	At all Ages.	At Ages—Years.					East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.	East Cardiff Regis. Sub-Dist.	Central Cardiff Regis. Sub-Dist.	West Cardiff Regis. Sub-Dist.
		Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 65.						
Small-pox ...	8	1	1	1	...	5	8	...	...	8	...	...
Cholera ...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria ...	724	9	227	357	77	53	179	189	356	98	82	171
Membranous Croup ...	10	1	5	4	...	...	...	2	8	...	...	...
Erysipelas ...	152	4	3	16	24	102	39	55	58	...	...	...
Scarlet Fever ...	1,362	28	362	834	99	39	597	340	425	254	172	189
Typhus Fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever ...	73	...	3	21	20	29	18	28	27	12	15	15
Relapsing Fever ...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever ...	3	...	...	...	1	2	...	1	2	...	5	2
Puerperal Fever ...	16	...	...	...	...	16	6	2	8	...	...	...
Plague ...	1	...	...	...	...	1	1	...	...	...	...	...
Totals ...	2,349	43	601	1,233	221	247	848	617	884	372	274	377

LOCAL GOVERNMENT BOARD TABLE.

TABLE IV.

CAUSES OF, AND AGES AT, DEATH DURING YEAR 1901.

CAUSES OF DEATH.	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES.							DEATHS IN OR BELONGING TO LOCALITIES AT ALL AGES.			Total Deaths in Public Institutions in the District.
	All Ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	East Cardiff Reg. Sub-dis.	Central Cardiff Reg. Sub-dis.	West Cardiff Reg. Sub-dis.	
Small-pox ...	1	...	...	...	...	1	...	...	...	1	1
Measles ...	3	1	2	...	...	...	...	...	...	3	1
Scarlet fever ...	29	...	23	6	...	...	...	6	4	19	11
Whooping-cough ...	86	42	41	3	...	...	...	17	31	38	...
Diphtheria and membranous croup ...	78	3	47	27	...	1	...	8	20	50	29
Croup ...	6	4	2	...	...	...	...	3	1	2	...
Fever (Enteric) ...	11	...	1	1	3	6	...	1	4	6	4
Epidemic influenza ...	26	2	...	1	1	17	5	10	11	5	...
Plague ...	1	...	...	...	...	1	...	1	...	...	...
Diarrhoea ...	76	67	5	1	...	2	1	28	21	27	1
Enteritis ...	52	34	9	2	1	4	2	34	13	5	1
Puerperal fever ...	5	...	...	...	...	5	...	...	1	4	...
Erysipelas ...	5	2	...	...	...	3	...	1	...	4	1
Other septic diseases ...	10	2	2	...	1	5	...	2	3	5	4
Phthisis ...	179	3	3	8	38	125	2	43	45	91	38
Other tubercular diseases ...	39	11	6	4	8	10	...	17	8	14	5
Cancer, malignant disease ...	75	...	...	1	...	57	17	24	23	28	15
Bronchitis ...	209	63	20	1	1	71	53	57	75	77	14
Pneumonia ...	287	78	62	12	16	88	31	82	95	110	22
Pleurisy ...	11	3	1	...	...	5	2	1	7	3	...
Other diseases of Respiratory organs ...	20	3	4	...	...	10	3	8	6	6	3
Alcoholism ...	32	...	...	...	2	26	4	7	7	18	7
Cirrhosis of liver } ...	32	...	...	...	2	26	4	7	7	18	7
Venereal diseases ...	6	2	1	...	...	2	1	...	1	5	4
Premature Birth ...	84	84	...	...	...	...	...	25	24	35	3
Diseases and accidents of parturition ...	19	...	...	...	2	17	...	8	4	7	...
Heart diseases ...	182	4	4	11	15	107	41	53	68	61	15
Accidents ...	77	3	9	7	13	38	7	11	54	12	37
Suicides ...	13	...	...	...	...	12	1	2	9	2	2
Homicide ...	4	2	...	...	...	1	1	1	2	1	1
All other causes ...	1,027	363	75	35	30	289	235	218	375	434	133
All causes ...	2,653	776	317	120	131	903	406	668	912	1,073	352

DEATHS FROM SPECIFIED CAUSES AT ALL AGES, AND AT SIX GROUPS OF AGES,

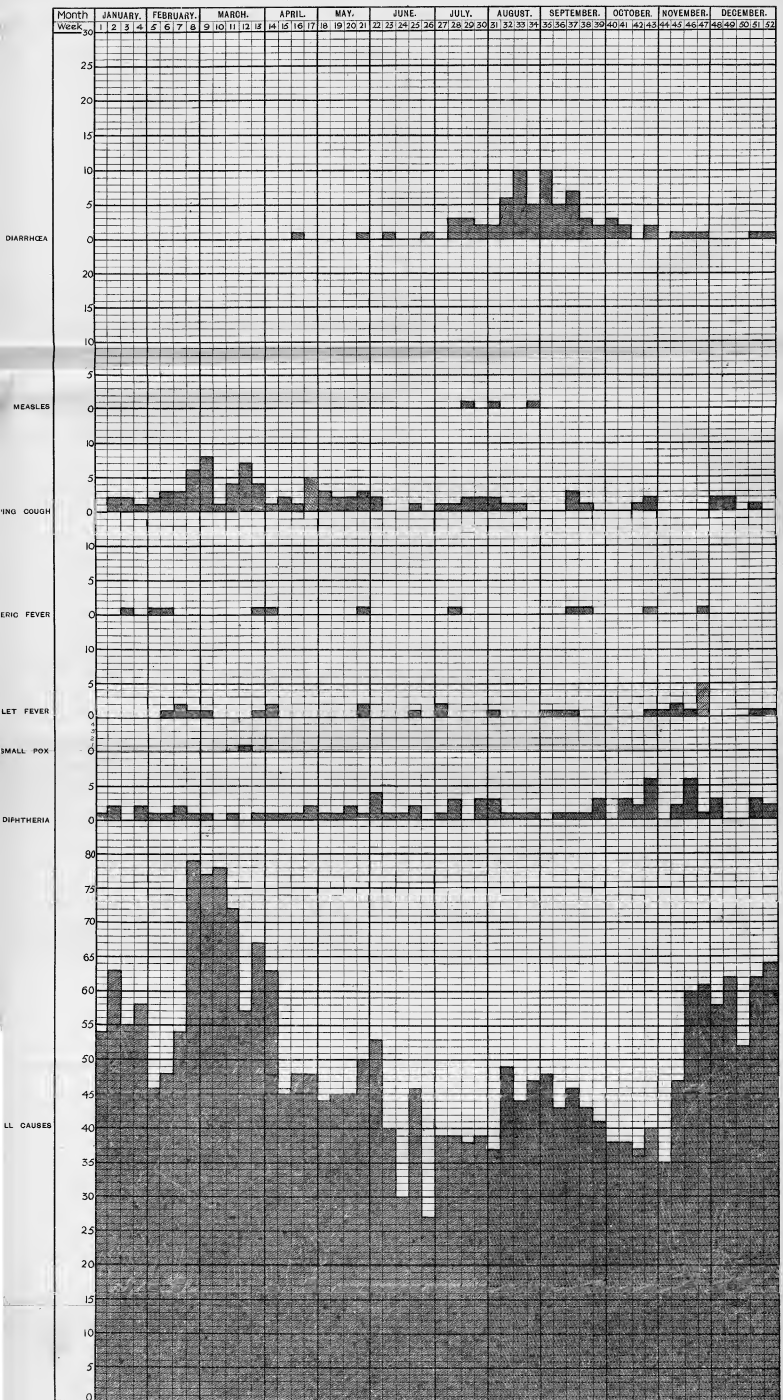
During the Year ending December 28th, 1901.

Estimated Population, 165,308.

CLASSES.	CAUSES OF DEATH.	0 to 1		1 to 5		5 to 15		15 to 25		25 to 65		65 and upwards.		ALL AGES.			Rate per 1,000 living.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.	
	ALL CAUSES.																
	Small Pox { Vaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Unvaccinated	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	No Statement	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
I.	Measles	...	...	1	1	...	...	...	...	...	...	...	...	1	2	3	0.01
	Scarlet Fever	...	...	14	9	8	8	...	...	...	...	...	...	17	12	29	0.17
	Typhus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Influenza	...	...	...	...	...	...	1	1	10	6	2	3	15	15	30	0.18
	Whooping Cough	...	...	22	30	17	24	2	1	...	...	...	...	41	45	86	0.52
	Diphtheria	...	...	2	1	26	21	9	18	...	...	...	...	38	40	78	0.47
	Erienteric Fever	...	...	...	...	1	...	2	1	4	2	...	...	7	4	11	0.06
	Simple Cholera, Chol. Diarrhoea	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Dysentery	...	...	86	80	2	8	...	...	1	...	...	...	40	35	75	0.45
	Veneral Affections	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Erysipelas	...	...	2	...	...	...	...	...	3	...	...	...	3	2	5	0.03
	Pyæmia, Septicæmia	...	...	...	...	1	...	...	...	2	3	...	...	2	4	6	0.03
	Puerperal Fever	...	...	...	...	...	...	...	...	...	5	...	...	...	5	5	0.03
	Other Specific Feb. or Zymotic Diseases	...	...	1	1	1	...	...	...	...	...	...	...	3	1	4	0.02
II.	Parasitic Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
III.	Dietic Diseases, Alcoholism	...	...	...	...	...	...	...	...	2	6	...	...	2	6	8	0.04
	Rheumatic Fever	...	...	...	...	1	1	...	...	1	1	...	...	2	3	5	0.03
	Rheumatism	...	...	...	...	...	...	...	...	1	2	1	3	5	5	10	0.06
	Rickets	...	...	1	3	4	1	...	...	...	...	...	...	5	5	10	0.06
	Cancer, Malignant Diseases	...	...	...	...	...	...	...	...	21	36	6	11	28	47	75	0.45
	Tuberculosis	...	...	9	2	...	...	...	...	1	...	...	...	9	4	13	0.07
IV.	Tubercular Meningitis, Hydrocephalus	...	...	18	11	19	4	...	...	...	...	...	...	30	24	54	0.32
	Phthisis Pulmonalis	...	...	1	2	2	1	4	16	22	69	62	...	92	88	175	1.05
	Scrophulous	...	...	6	5	2	4	2	8	5	7	...	...	20	19	39	0.23
	Anæmia, Chlorosis	...	...	2	2	1	1	1	1	...	...	...	...	5	9	14	0.08
	Diabetes Mellitus	...	...	...	...	...	...	...	...	8	1	1	1	4	2	6	0.03
	Other Constitutional Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2	0.01
V.	Premature Birth	...	...	40	44	...	...	...	...	...	...	...	...	40	44	84	0.50
	Congenital Malformations	...	...	8	6	...	...	...	...	...	...	...	...	8	6	14	0.08
	Old Age	...	...	...	...	...	...	...	...	3	9	67	65	70	74	144	0.87
	Inflammation of Brain and Membranes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Apoplexy, Paralysis	...	...	...	...	...	...	...	...	24	16	21	23	48	39	87	0.52
	Epilepsy	...	...	...	...	...	...	...	...	1	6	14	...	2	8	10	0.10
	Convulsions	...	...	...	...	...	...	...	...	1	...	...	...	47	34	81	0.48
	Laryngismus Stridulus	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Paraplegia, Disease of Spinal Cord	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Disease of Nervous System	...	...	...	...	...	...	...	...	5	5	1	...	9	5	14	0.08
	Endocarditis, Valvular Diseases	...	...	...	...	...	...	...	...	50	66	19	22	65	96	151	0.90
	Pericarditis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Angina Pectoris	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Syncope	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Aneurism	...	...	...	...	...	...	...	...	9	...	...	...	9	...	9	0.05
	Senile Gangrene	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Embolism, Thrombosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Diseases of Circulation	...	...	...	...	...	...	...	...	1	1	...	...	1	3	4	0.02
	Laryngitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Croup	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VI.	Other Diseases of Larynx and Trachea	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Emphysema, Asthma	...	...	...	...	...	...	...	...	3	5	1	2	4	7	11	0.06
	Bronchitis	...	...	37	26	10	10	...	...	1	44	27	38	114	95	209	1.26
	Pneumonia	...	...	42	36	31	31	6	9	7	60	27	13	18	161	125	0.76
	Other Respiratory Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Stomatitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Dentition	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diseases of Stomach and Intestines	...	...	2	1	1	1	1	1	7	5	8	8	15	12	27	0.16
	Gastritis	...	...	16	10	...	...	...	...	1	3	...	...	1	18	17	0.10
	Enteritis	...	...	20	14	...	...	...	...	...	...	...	...	...	...	...	...
	Peritonitis	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
	Jaundice	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Cirrhosis and other Diseases of Liver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Disease of Digestive System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diseases of Urinary Organs	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diseases of Organs of Generation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diseases of Organs of Parturition	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Diseases of Integumentary System	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Local Diseases	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
V I.	Accident, Negligence	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Suffocation	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Homicide	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Suicide	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Execution	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
VIII.	Debility, Atrophy, Inanition	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Other Ill-defined Causes	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	TOTAL.	497	588	165	152	66	64	66	62	476	382	198	205	1,393	1,208	2,596	15.7

1901.

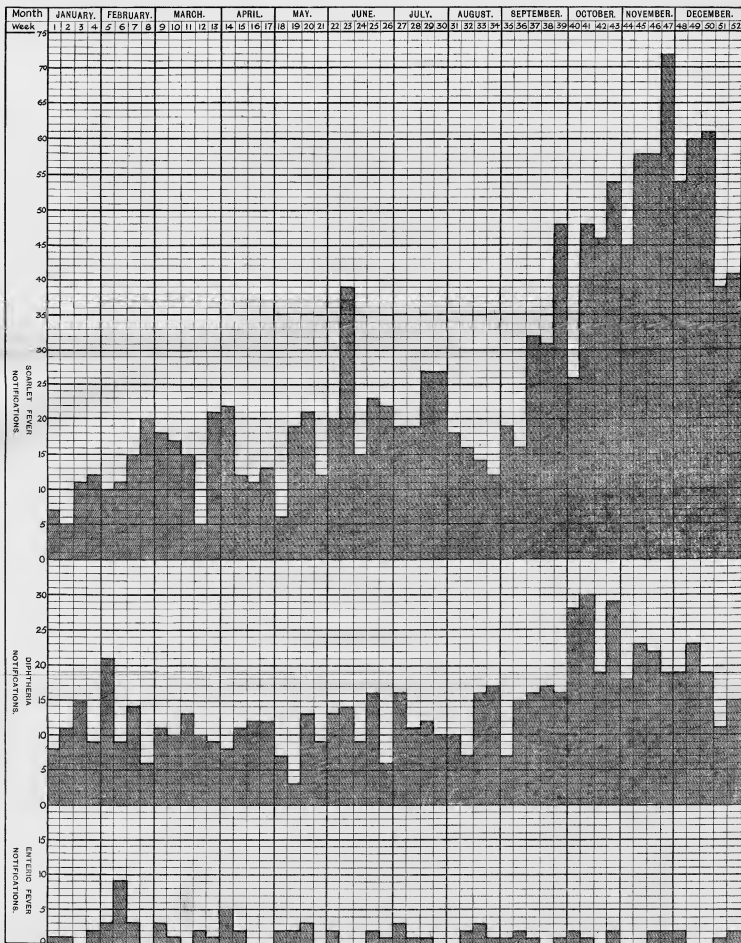
Deaths from All Causes, and the Seven Chief Zymotic Diseases.



Notes :

1901.

Weekly Notifications of Scarlet Fever, Diphtheria and Enteric Fever.



METEOROLOGICAL OBSERVATIONS,



Chart Showing death-rate per 1,000 of the population from Zymotic Diseases during the Years 1878—1901.

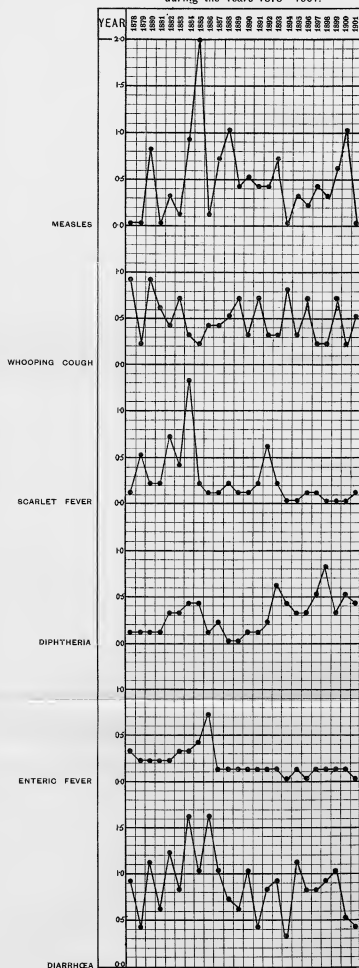


Chart showing the influence of temperature on the Diarrhoea death-rate in Cardiff, during the Summer quarters of the Years 1872—1901

